

NOTICE:

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The Administrative Record Staff



000026880

INTEROFFICE CORRESPONDENCE

DATE: September 21, 1994

TO: J. M. Stelmach, Administrative Record, Bldg. 080, X8503

FROM: L. J. Franca, Administrative Record, Bldg. 080, X8637

SUBJECT: IHSS REPORT COMPLETION - LJF-021-94

Ref: L. J. Franca ltr, LJF-013-94 to J. M. Stelmach, IHSS Report Status, June 30, 1994

Attached is a copy of the completed IHSS Report. It has been printed both in IHSS order and IHSS order within each OU. This information has been verified against a list prepared by Nick Demos. His list has been verified by each OU Manager. All of the information relied upon to complete this report is also attached.

ljf

Attachments:
As Stated

cc:
H. I. Barthel (w/out attachments)
D. L. Urban (w/out attachments)
Project File Center



Table 1:
INDIVIDUAL HAZARDOUS SUBSTANCE SITES

<u>REF. NO.</u>	<u>SITE NAME</u>
101	207 SOLAR EVAPORATION PONDS
102	OIL SLUDGE PIT
103	CHEMICAL BURIAL
104	LIQUID DUMPING
105	OUT-OF-SERVICE FUEL TANKS
	105.1 - WESTERNMOST TANK
	105.2 - EASTERNMOST TANK
106	OUTFALL
107	HILLSIDE OIL LEAK
108	TRENCH T-1
109	TRENCH T-2
110	TRENCH T-3
111	TRENCHES T-4 TO T-11
	111.1 : TRENCH T-4
	111.2 : TRENCH T-5
	111.3 : TRENCH T-6
	111.4 : TRENCH T-7
	111.5 : TRENCH T-8
	111.6 : TRENCH T-9
	111.7 : TRENCH T-10
	111.8 : TRENCH T-11
112	903 DRUM STORAGE AREA
113	MOUND AREA
114	PRESENT LANDFILL
115	ORIGINAL LANDFILL
116	MULTIPLE SOLVENT SPILLS
	116.1 : WEST LOADING DOCK AREA
	116.2 : SOUTH LOADING DOCK AREA

Note: This information is based on the administrative record including the information submitted in the hazardous and low-level mixed waste Part B application dated November 1, 1985, as modified by the subsequent revision dated November 28, 1986, as modified by the subsequent revision dated December 15, 1987, and the transuranic mixed waste Part B application submitted July 1, 1988, [hereafter referred to as the applications]. This information is also based on independent review of historical aerial photographs of the facility and independent review of facility submittals.

Table 1:
INDIVIDUAL HAZARDOUS SUBSTANCE SITES

<u>REF. NO.</u>	<u>SITE NAME</u>
117	CHEMICAL STORAGE 117.1 : NORTH SITE 117.2 : MIDDLE SITE 117.3 : SOUTH SITE
118	MULTIPLE SOLVENT SPILLS 118.1 : WEST OF BUILDING 730 118.2 : SOUTH END OF BUILDING 776
119	MULTIPLE SOLVENT SPILLS 119.1 : WEST AREA 119.2 : EAST AREA
120	FIBERGLASSING AREAS 120.1 : NORTH OF BUILDING 664 120.2 : WEST OF BUILDING 664
121	ORIGINAL PROCESS WASTE LINES
122	UNDERGROUND CONCRETE TANK
123	VALVE VAULT 7 123.1 : VALVE VAULT 7 123.2 : VALVE VAULT WEST OF BUILDING 707
124	RADIOACTIVE LIQUID WASTE STORAGE TANK 124.1 : 30,000 GALLON TANK (T-68, Unit 55.14) 124.2 : 14,000 GALLON TANK (T-66, Unit 55.15) 124.3 : 14,000 GALLON TANK (T-67, Unit 55.16)
125	HOLDING TANK
126	OUT-OF-SERVICE PROCESS WASTE TANKS 126.1 : WESTERNMOST TANK 126.2 : EASTERNMOST TANK
127	LOW-LEVEL RADIOACTIVE WASTE LEAK
128	OIL BURN PIT NO. 1
129	OIL LEAK
130	RADIOACTIVE SITE - 800 AREA SITE #1
131	RADIOACTIVE SITE - 700 AREA SITE #1
132	RADIOACTIVE SITE - 700 AREA SITE #4
133	ASH PITS 133.1 : ASH PIT 1-1 133.2 : ASH PIT 1-2 133.3 : ASH PIT 1-3 133.4 : ASH PIT 1-4 133.5 : INCINERATOR 133.6 : CONCRETE WASH PAD
134	LITHIUM METAL DESTRUCTION SITE
135	COOLING TOWER BLOWDOWN

Table 1:
INDIVIDUAL HAZARDOUS SUBSTANCE SITES

<u>REF. NO.</u>	<u>SITE NAME</u>
136	COOLING TOWER PONDS 136.1 : NORTHEAST CORNER OF BUILDING 460 136.2 : WEST OF BUILDING 460 136.3 : S. OF BLDG. 460, W. OF BLDG. 444
137	COOLING TOWER BLOWDOWN - BLDG. 774
138	COOLING TOWER BLOWDOWN - BLDG. 779
139	CAUSTIC/ACID SPILLS 139.1 : HYDROXIDE TANK AREA 139.2 : HYDROFLUORIC ACID TANKS
140	REACTIVE METAL DESTRUCTION SITE
141	SLUDGE DISPERSAL
142	RETENTION PONDS (A,B,C-SERIES) 142.1 : A-1 POND 142.2 : A-2 POND 142.3 : A-3 POND 142.4 : A-4 POND 142.5 : B-1 POND 142.6 : B-2 POND 142.7 : B-3 POND 142.8 : B-4 POND 142.9 : B-5 POND 142.10: C-1 POND 142.11: C-2 POND 142.12 NEWLY IDENTIFIED A-5 POND
143	OLD OUTFALL
144	SEWER LINE BREAK
145	SANITARY WASTE LINE LEAK
146	CONCRETE PROCESS WASTE TANKS 146.1 : 7,500 GALLON TANK (#31) 146.2 : 7,500 GALLON TANK (#32) 146.3 : 7,500 GALLON TANK (#34W) 146.4 : 7,500 GALLON TANK (#34E) 146.5 : 3,750 GALLON TANK (#30) 146.6 : 3,750 GALLON TANK (#33)
147	PROCESS WASTE LEAKS 147.1 : MAAS AREA 147.2 : OWEN AREA
148	WASTE SPILLS
149	EFFLUENT PIPE
150	RADIOACTIVE LIQUID LEAKS (8) 150.1 : NORTH OF BUILDING 771 150.2 : WEST OF BUILDING 771 150.3 : BETWEEN BUILDINGS 771 and 774 150.4 : EAST OF BUILDING 750 150.5 : WEST OF BUILDING 707 150.6 : SOUTH OF BUILDING 779 150.7 : SOUTH OF BUILDING 776

Table 1:
INDIVIDUAL HAZARDOUS SUBSTANCE SITES

<u>REF. NO.</u>	<u>SITE NAME</u>
	150.8 : NORTHEAST OF BUILDING 779
151	FUEL OIL LEAK
152	FUEL OIL TANK
153	OIL BURN PIT NO. 2
154	PALLET BURN SITE
155	903 LIP AREA
156	RADIOACTIVE SOIL BURIAL
	156.1 : BUILDING 334 PARKING LOT
	156.2 : SOIL DUMP AREA
157	RADIOACTIVE SITE
	157.1 : NORTH AREA
	157.2 : SOUTH AREA
158	RADIOACTIVE SITE - BLDG. 551
159	RADIOACTIVE SITE - BLDG. 559
160	RADIOACTIVE SITE - BLDG. 444 PK LOT
161	RADIOACTIVE SITE - BLDG. 664
162	RADIOACTIVE SITE - 700 AREA SITE #2
163	RADIOACTIVE SITE - 700 AREA SITE #3
	163.1 : WASH AREA
	163.2 : BURIED SLAB
164	RADIOACTIVE SITE - 800 AREA SITE #2
	164.1 : CONCRETE SLAB
	164.2 : BUILDING 886 SPILLS
	164.3 : BUILDING 889 STORAGE PAD
165	TRIANGLE AREA
166	TRENCHES
	166.1 : TRENCH A
	166.2 : TRENCH B
	166.3 : TRENCH C
167	SPRAY FIELDS - THREE SITES
	167.1 : NORTH AREA
	167.2 : POND AREA
	167.3 : SOUTH AREA
168	WEST SPRAY FIELD
169	WASTE DRUM PEROXIDE BURIAL
170	P.U. & D. STORAGE YARD - WASTE SPILLS
171	SOLVENT BURNING GROUND
172	CENTRAL AVENUE WASTE SPILL
173	RADIOACTIVE SITE - 900 AREA
174	P.U. & D. CONTAINER STORAGE FACILITIES (2)
175	S&W BLDG. 980 CONTAINER STORAGE FACILITY
176	S&W CONTRACTOR STORAGE YARD
177	BUILDING 885 DRUM STORAGE AREA
178	BUILDING 881 DRUM STORAGE AREA
179	BUILDING 865 DRUM STORAGE AREA
180	BUILDING 883 DRUM STORAGE AREA

Table 1:
INDIVIDUAL HAZARDOUS SUBSTANCE SITES

<u>REF NO.</u>	<u>SITE NAME</u>
181	BUILDING 334 CARGO CONTAINER AREA
182	BUILDING 444/453 DRUM STORAGE AREA
183	GAS DETOXIFICATION AREA
184	BUILDING 991 STEAM CLEANING AREA
185	SOLVENT SPILL
186	VALVE VAULT 12
187	ACID LEAKS (2)
188	ACID LEAK
189	MULTIPLE ACID SPILLS
190	CAUSTIC LEAK
191	HYDROGEN PEROXIDE SPILL
192	ANTIFREEZE DISCHARGE
193	STEAM CONDENSATE LEAK
194	STEAM CONDENSATE LEAK
195	NICKEL CARBONYL DISPOSAL
196	WATER TREATMENT PLANT BACKWASH POND
197	SCRAP METAL SITES
198	(Deleted)
199	CONTAMINATION OF THE LAND SURFACE
200	GREAT WESTERN RESERVOIR
201	STANDLEY RESERVOIR
202	MOWER RESERVOIR
203	INACTIVE HAZARDOUS WASTE STORAGE AREA
204	ORIGINAL URANIUM CHIP ROASTER
205	BLDG. 460 SUMP #3 ACID SIDE
206	INACTIVE D-836 HAZARDOUS WASTE TANK
207	INACTIVE 444 ACID DUMPSTER
208	INACTIVE 444/447 WASTE STORAGE AREA
209	SURFACE DISTURBANCE SOUTHEAST OF BLDG. 881
210	UNIT 16, BUILDING 980 CARGO CONTAINER
211	UNIT 26, BUILDING 881 DRUM STORAGE
212	UNIT 63, BUILDING 371 DRUM STORAGE
213	UNIT 15, 904 PAD PONDCRETE STORAGE
214	UNIT 25, 750 PAD PONDCRETE AND SALTCRETE STORAGE
215	UNIT 55.13 - TANK T-40
216	EAST SPRAY FIELDS
	216.1 : NORTH AREA
	216.2 : CENTER AREA
	216.3 : SOUTH AREA
217	UNIT 32, BUILDING 881, CN ⁻ BENCH SCALE TREATMENT

Table 2: Organization of Individual
Sites Into Operable Units (OU)

<u>Operable Unit</u>	<u>Individual Sites</u>
1	102, 103, 104, 105.1, 105.2, 106, 107, 119.1, 119.2, 130, 145
2	108, 109, 110, 111.1, 111.2, 111.3, 111.4, 111.5, 111.6, 111.7, 111.8, 112, 113, 140, 153, 154, 155, 183, 216.2, 216.3
3	199, 200, 201, 202
4	101
5	115, 133.1, 133.2, 133.3, 133.4, 133.5, 133.6, 142.10, 142.11, 209
6	141, 142.1, 142.2, 142.3, 142.4, 142.5, 142.6, 142.7, 142.8, 142.9, 142.12, 143, 165, 166.1, 166.2, 166.3, 167.1, 167.2, 167.3, 216.1
7	114, 203
8	118.1, 118.2, 123.1, 123.2, 125, 126.1, 126.2, 127, 132, 135, 137, 138, 139.1, 139.2, 144, 146.1, 146.2, 146.3, 146.4, 146.5, 146.6, 149, 150.1, 150.2, 150.3, 150.4, 150.5, 150.6, 150.7, 150.8, 151, 159, 163.1, 163.2, 172, 173, 184, 188
9	121
10	124, 124.1, 124.2, 124.3, 129, 170, 174, 175, 176, 177, 181, 182, 205, 206, 207, 208, 210, 213, 214
11	168
12	116.1, 116.2, 120.1, 120.2, 136.1, 136.2, 136.3, 147.1, 147.2, 157.2, 187, 189
13	117.1, 117.2, 117.3, 122, 128, 134, 148, 152, 157.1, 158, 169, 171, 186, 190, 191
14	131, 156.1, 156.2, 160, 161, 162, 164.1, 164.2, 164.3
15	178, 179, 180, 204, 211, 212, 215, 217
16	185, 192, 193, 194, 195, 196, 197



ROY ROMER
Governor

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Executive Director

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Attachment 3
LJF-021-94
Page 1 of 2

April 21, 1992

Mr. Frazer Lockhart
U. S. Department of Energy
Rocky Flats Office
P.O. Box 928
Golden, Colorado 80402-0928

RE: Modification to Work in the IAG

Dear Mr. Lockhart,

Pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG, CDE and EPA hereby notify DOE that certain IHSSs included in several OUs, and the investigatory and remedial work associated with them, are now to be addressed as part of alternate OUs as follows:

IHSS 122:	From OU 13 to OU 9
IHSS 123.2:	From OU 8 to OU 9
IHSS 124:	From OU 10 to OU 9
IHSS 125:	From OU 8 to OU 9
IHSS 126:	From OU 8 to OU 9
IHSS 127:	From OU 8 to OU 9
IHSS 132:	From OU 8 to OU 9
IHSS 146:	From OU 8 to OU 9
IHSS 147.1:	From OU 12 to OU 9
IHSS 149:	From OU 8 to OU 9
IHSS 159:	From OU 8 to OU 9
IHSS 215:	From OU 15 to OU 9

Rationale: The above IHSSs all constitute part of the Original Process Waste Lines (OPWL) and will be investigated and remedied as such. These changes were recommended by DOE in the now-approved OU 9 Phase I RFI/RI Workplan. They need to be finalized as soon as possible so as not to impact the preparation of the RFI/RI Workplans for the OUs from which they are being moved.

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U.S.D.O.F.
R.F.O. MAIL ROOM
1992 APR 27 A 8:22


IHSS 156.2: From OU 14 to OU 6

Rationale: This change was recommended by DOE in the now-approved OU 6 Phase I RFI/RI Workplan because of the IHSS location along the Walnut Creek Drainage.

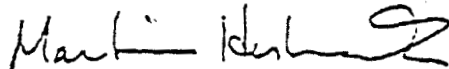
EPA and the Division consider these changes to be a modification to work associated with implementation of the IAG and are effective immediately. Although these changes were recommended by DOE, if you do not agree with any of these changes, you may invoke appropriate dispute-resolution procedures within 14 days. However, we would appreciate early notice of your disagreement so that an attempt can be made to resolve differences before dispute-resolution is invoked.

If you have any questions regarding these matters, please call Joe Schieffelin (CDH) at 331-4421.

Sincerely,



Gary W. Baughman
Unit Leader, Hazardous Facilities Unit
Hazardous Materials and Waste Management Division



Martin Hestmark
Manager
Rocky Flats Project
Environmental Protection Agency

cc: Daniel S. Miller, AGO
Barbara Barry, RFPD
Paul Bunge, EG&G
Peter Ornstein, EPA

REV: 0
5/13/92

Organization of Individual Hazardous Substance Sites (IHSS)
Into Operable Units (OU)

<u>Operable Unit #</u>	<u>Individual Hazardous Substance Sites</u>
1	102, 103, 104, 105.1, 105.2, 106, 107, 119.1, 119.2, 130, 145
2	108, 109, 110, 111.1, 111.2, 111.3, 111.4, 111.5, 111.6, 111.7, 111.8, 112, 113, 140, 153, 154, 155, 183, 216.2, 216.3
3	199, 200, 201, 202
4	101
5	115, 133.1, 133.2, 133.3, 133.4, 133.5, 133.6, 142.10, 142.11, 209
6	141, 142.1, 142.2, 142.3, 142.4, 142.5, 142.6, 142.7, 142.8, 142.9, 142.12, 143, 156.2, 165, 166.1, 166.2, 166.3, 167.1, 167.2, 167.3, 216.1
7	114, 203
8	118.1, 118.2, 123.1, 135, 137, 138, 139.1, 139.2, 144, 146.2, 146.3, 146.4, 146.5, 146.6, 150.1, 150.2, 150.3, 150.4, 150.5, 150.6, 150.7, 150.8, 151, 163.1, 163.2, 172, 173, 185 188 184
9	121, 122, 123.2, 124.1, 124.2, 124.3, 125, 126.1, 126.2, 127, 132, 146.1, 146.2, 146.3, 146.4, 146.5, 146.6, 147.1, 149, 159, 215
10	124.1, 124.2, 124.3, 129, 170, 174, 175, 176, 177, 181, 182, 205, 206, 207, 208, 210, 213, 214
11	168
12	116.1, 116.2, 120.1, 120.2, 136.1, 136.2, 136.3, 147.2, 157.2, 187, 189
13	117.1, 117.2, 117.3, 128, 134, 148, 152, 157.1, 158, 169, 171, 186, 190, 191

OU 5
Work Plan
2/28/92

EG&G ROCKY FLATS PLANT
RFI/RI Work Plan for OU 5

Manual:

21100-WP-OU5.01

Section:

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Revision:

1

Page:

iii of xv

Effective Date:

2/28/92

Organization:

Environmental Management

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Approved By:

ENVIRONMENTAL DEPARTMENT Name

(Date)

2/24/92

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IHSS 115
from 2/11/92
Per COW to OUS
5/15/93

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LIST OF ACRONYMS

The following is a list of acronyms used throughout this work plan.

ACL	Alternative Concentration Limit
AEC	Atomic Energy Commission
ARAR	Applicable or Relevant and Appropriate Requirements
AWQC	Ambient Water Quality Criteria
BCF	Bioconcentration Factor
BNA	Base-neutral acid extractable organics
BRAP	Baseline Risk Assessment Plan
CAD	Corrective Action Decision
CCR	Colorado Code of Regulations
CDH	Colorado Department of Health
CEARP	Comprehensive Environmental Assessment and Response Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CLP	Contract Laboratory Program
CMP	corrugated metal pipe
CMS	corrective measures study
CRP	community relations plan
CWA	Clean Water Act
DOE	Department of Energy
DQO	data quality objective
EEP	Environmental Evaluation Plan
EIS	Environmental Impact Statement
EM	electromagnetic
EPA	Environmental Protection Agency
ER	environmental restoration
ERDA	Energy Research and Development Administration
FIDLER	Field Instrument for Detection of Low Energy Radiation
FS	feasibility study
FSP	field sampling plan
GAC	granular activated carbon
GC	gas chromatograph
GRRASP	General Radiochemistry and Routine Analytical Services Protocol
HSP	Health and Safety Plan
HSU	Hydrostratigraphic unit
IAG	Interagency Agreement
IHSS	Individual Hazardous Substance Site
IRIS	Integrated Risk Information System
MCL	maximum contaminant level

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LIST OF ACRONYMS (cont.)

MCLG	maximum contaminant level goal
MSL	mean sea level
NCP	National Contingency Plan
NPDES	National Pollutant Discharge Elimination System
PARCC	precision, accuracy representativeness, completeness, and comparability
PCB	polychlorinated biphenyl
PCE	tetrachloroethylene
PID	photoionization detector
QAA	Quality Assurance Addendum
QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plan
RAAMP	Radioactive Ambient Air Monitoring Program
RCRA	Resource Conservation and Recovery Act
RFEDS	Rocky Flats Environmental Database System
RFI	RCRA facility investigation
RI	remedial investigation (CERCLA)
ROD	Record of Decision
SAS	Special Analytical Services
SAP	sampling and analysis plan
SARA	Superfund Amendments and Reauthorization Act of 1986
SID	South Interceptor Ditch
SDWA	Safe Drinking Water Act
SOP	Standard Operating Procedure
SOPA	Standard Operating Procedure Addendum
TAL	target analyte list
TBC	to be considered
TCA	trichloroethane
TCE	trichloroethylene
TCL	target compound list
TDS	total dissolved solids
TIC	tentatively identified compounds
TOC	total organic carbon
UV	ultraviolet
VOA	volatile organic analysis
VOC	volatile organic compounds
WQC	Water Quality Criteria
WQCC	Water Quality Control Commission

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AEC	U.S. Atomic Energy Commission
ARAR	Applicable or Relevant and Appropriate Requirement
ASME	American Society of Mechanical Engineers
ATV	All-Terrain Vehicle
AWQC	Ambient Water Quality Criteria
BRA	Baseline Risk Assessment
BS	Building Sump
CAD	Corrective Action Decisions
CCR	Colorado Code of Regulations
CDH	Colorado Department of Health
CEARP	Comprehensive Environmental Assessment and Response Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CHWA	Colorado Hazardous Waste Act
CLP	contract laboratory program
CMS	Corrective Measures Study
COC	contaminants of concern
CRP	Community Relations Plan
CSBs	Chemical Specific Benchmarks
CWA	Clean Water Act
CWQCC	Colorado Water Quality Control Commission
DCN	document change notice
DOE	U.S. Department of Energy
DRCOG	Denver Regional Council of Governments
DQO	data quality objective
EE	Environmental Evaluation
EEWP	Environmental Evaluation Work Plan
EG&G	EG&G Rocky Flats, Inc.
EM	Environmental Management
EMD	Environmental Management Division
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration
ERDA	Energy Research and Development Administration
FID	Flame Ionization Detector
FIDLER	Field Instrument for Detection of Low-Energy Radiation
FS	Feasibility Study
FSP	Field Sampling Plan
GC	gas chromatograph

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LIST OF ACRONYMS
(Continued)

GPR	ground penetrating radar
GRRASP	General Radiochemistry and Routine Analytical Services Protocol
HEAST	Health Effects Assessment Summary Tables
HPGe	High Purity Germanium
HRR	Historical Release Report
LAG	Interagency Agreement
ICRP	International Commission on Radiological Protection
IHSS	Individual Hazardous Substance Site
IPPCD	Interim Plan for Prevention of Contaminant Dispersion
IRIS	Integrated Risk Information System
KSS	Kansas Soil Sampler
MCL	Maximum Contaminant Level
MPL	Maximum Permissible Limit
NCP	National Contingency Plan
NCRP	National Commission on Radiological Protection
NPDES	National Pollutant Discharge Elimination System
OP	Operating Procedure
OPWL	Original Process Waste Line
OSWER	Office of Solid Waste and Emergency Response
OU	operable unit
PARCC	precision, accuracy, representativeness, completeness, and comparability
PA	Protected Area
PAC	Potential Area of Concern
PCB	polychlorinated biphenyl
PID	Photoionization Detector
PQL	Practical Quantitation Limit
PRG	Preliminary Remediation Goals
PSZ	Perimeter Security Zone
PVC	polyvinyl chloride
QA	Quality Assurance
QAA	Quality Assurance Addendum
QAPjP	Quality Assurance Project Plan
QAPM	Quality Assurance Project Manager
QC	Quality Control
RAAMP	Radiological Ambient Air Monitoring Program
RCRA	Resource Conservation and Recovery Act
RfD	reference dose
RFEDS	Rocky Flats Environmental Database System

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LIST OF ACRONYMS
(Continued)

RFI	RCRA Facility Investigation
RFP	Rocky Flats Plant
RI	Remedial Investigation
RME	reasonable maximum exposure
ROD	Record of Decision
RSP	Respirable Suspended Particulate
SAP	Sampling and Analysis Plan
SARA	Superfund Amendments and Reauthorization Act of 1986
SDWA	Safe Drinking Water Act
SOP	Standard Operating Procedure
SWMU	solid waste management unit
TAL	Target Analyte List
TBC	To Be Considered
TCA	trichloroethane
TCE	trichloroethene
TCL	Target Compound List
TDS	total dissolved solids
TIC	tentatively identified compound
TM	technical memorandum
TOC	total organic carbon
TSCA	Toxic Substances Control Act
UBC	under-building contamination
VOA	volatile organic analyses
VOC	volatile organic compound
WQCC	Water Quality Control Commission

TABLE 3-2
PREVIOUSLY IDENTIFIED and NEWLY IDENTIFIED PACs

IHSS NO.	OU NO.	PAC NO.	PAC NAME	PAGE
NORTHEAST BUFFER ZONE				
110	2	NE-110	Trench T-3	NE-5
111.1	2	NE-111.1	Trench T-4	NE-7
111.2	2	NE-111.2	Trench T-5	NE-7
111.3	2	NE-111.3	Trench T-6	NE-7
111.4	2	NE-111.4	Trench T-7	NE-7
111.5	2	NE-111.5	Trench T-8	NE-7
111.6	2	NE-111.6	Trench T-9	NE-7
111.7	2	NE-111.7	Trench T-10	NE-7
111.8	2	NE-111.8	Trench T-11	NE-7
142.1	6	NE-142.1	Retention Pond A-1	NE-9
142.2	6	NE-142.2	Retention Pond A-2	NE-9
142.3	6	NE-142.3	Retention Pond A-3	NE-9
142.4	6	NE-142.4	Retention Pond A-4	NE-9
142.5	6	NE-142.5	Retention Pond B-1	NE-14
142.6	6	NE-142.6	Retention Pond B-2	NE-14
142.7	6	NE-142.7	Retention Pond B-3	NE-14
142.8	6	NE-142.8	Retention Pond B-4	NE-14
142.9	6	NE-142.9	Retention Pond B-5	NE-14
142.12	6	NE-142.12	Flume Pond (IAG Name: Newly Identified Pond A-5)	NE-23
156.2	6 ¹	NE-156.2	Soil Dump Area	NE-25
166.1	6	NE-166.1	Trench A	NE-27
166.2	6	NE-166.2	Trench B	NE-27
166.3	6	NE-166.3	Trench C	NE-27
167.1	6	NE-167.1	North Area Spray Field	NE-29
167.2	6	NE-167.2	Pond Area Spray Field (Center Area)	NE-29
167.3	6	NE-167.3	South Area Spray Field	NE-29
216.1	6	NE-216.1	East Spray Fields - North Area	NE-33
216.2	2	NE-216.2	East Spray Fields - Center Area	NE-33

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PREVIOUSLY IDENTIFIED and NEWLY IDENTIFIED PACs

IHSS NO.	OU NO.	PAC NO.	PAC NAME	PAGE
216.3	2	NE-216.3	East Spray Fields - South Area	NE-33
NA ²	NA	NE-1400	Tear Gas Powder Release	NE-36
NA	NA	NE-1401	NE Buffer Zone Gas Line Break	NE-37
NA	NA	NE-1402	East Inner Gate PCB Spill	NE-38
NA	NA	NE-1403	Gasoline Spill - Building 920 Guard Post	NE-39
NORTHWEST BUFFER ZONE				
114	7	NW-114	Present Landfill	NW-5
170	10	NW-170	PU&D Storage Yard - Waste Spills	NW-13
174	10	NW-174	PU&D Container Storage Facilities (2)	NW-15
195	16	NW-195	Nickel Carbonyl Disposal	NW-17
203	7	NW-203	Inactive Hazardous Waste Storage Area	NW-19
SOUTHEAST BUFFER ZONE				
142.10	5	SE-142.10	Retention Pond C-1	SE-5
142.11	5	SE-142.11	Retention Pond C-2	SE-5
209	5	SE-209	Surface Disturbance Southeast of Building 881	SE-9
NA	NA	SE-1600	Pond 7 - Steam Condensate Releases	SE-10
NA	NA	SE-1601	Pond 8 - Cooling Tower Discharge Releases	SE-13
SOUTHWEST BUFFER ZONE				
115	5	SW-115	Original Landfill	SW-5
133.1	5	SW-133.1	Ash Pit I-1	SW-8
133.2	5	SW-133.2	Ash Pit I-2	SW-8
133.3	5	SW-133.3	Ash Pit I-3	SW-8
133.4	5	SW-133.4	Ash Pit I-4	SW-8
133.5	5	SW-133.5	Incinerator	SW-10
133.6	5	SW-133.6	Concrete Wash Pad	SW-12
196	16	SW-196	Water Treatment Plant Backwash Pond	SW-13
NA	NA	SW-1700	Fuel Spill into Woman Creek Drainage	SW-15
000 AREA				
101	4	000-101	Solar Ponds (IAG Name: 207 Solar Evaporation Ponds)	000-5

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PREVIOUSLY IDENTIFIED and NEWLY IDENTIFIED PACs

IHSS NO.	OU NO.	PAC NO.	PAC NAME	PAGE
121	9	000-121	Original Process Waste Lines	000-19
162	14	000-162	Radioactive Site - 700 Area Site # 2	000-37
168	11	000-168	West Spray Field	000-39
172	8	000-172	Central Avenue Waste Spill	000-41
190	13	000-190	Caustic Leak	000-44
192	16	000-192	Antifreeze Discharge	000-47
NA	NA	000-500	Sanitary Sewer System	000-49
NA	NA	000-501	Roadway Spraying	000-60
100 AREA				
148	13	100-148	Waste Spills	100-5
NA	NA	100-600	Mercury Spill - Valve Vault 124-B, Building 124	100-8
NA	NA	100-601	Building 123 Phosphoric Acid Spill	100-10
NA	NA	100-602	Building 123 Process Waste Line Break	100-11
NA	NA	100-603	Building 123 Bioassay Waste Spill	100-13
NA	NA	100-604	T130 Complex Sewer Line Leaks	100-15
NA	NA	100-605	Building 115 Hydraulic Oil Spill	100-16
NA	NA	100-606	Building 125 TCE Spill	100-17
NA	NA	100-607	Building 111 Transformer PCB Leak	100-18
NA	NA	100-608	Building 131 Transformer Leak	100-20
NA	NA	100-609	Building 121 Security Incinerator	100-21
NA	NA	100-610	Asbestos Release - Building 123	100-22
NA	NA	100-611	Building 123 Scrubber Solution Spill	100-23
NA	NA	100-612	Battery Solution Spill - Building 119	100-25
300 AREA				
128	13	300-128	Oil Burn Pit No. 1	300-5
134	13	300-134	Lithium Metal Destruction Site	300-7
135	8	300-135	Cooling Tower Blowdown	300-10
151	8	300-151	Fuel Oil Leak	300-12
156.1	14	300-156.1	Building 334 Parking Lot	300-14

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PREVIOUSLY IDENTIFIED and NEWLY IDENTIFIED PACs

IHSS NO.	OU NO.	PAC NO.	PAC NAME	PAGE
171	13	300-171	Solvent Burning Ground	300-16
181	10	300-181	Building 334 Cargo Container Area	300-18
186	13	300-186	Valve Vault 12	300-19
188	8	300-188	Acid Leak	300-22
206	10	300-206	Inactive D-836 Hazardous Waste Tank	300-23
212	15	300-212	Building 371 Drum Storage, Unit 63	300-24
NA	NA	300-700	Scrap Roofing Disposal	300-25
NA	NA	300-701	Sulfuric Acid Spill - Building 371	300-26
NA	NA	300-702	Pesticide Shed	300-27
NA	NA	300-703	Building 331 North Area	300-28
NA	NA	300-704	Roof Fire, Building 381	300-29
NA	NA	300-705	Potassium Hydroxide Spill North of Building 374	300-30
NA	NA	300-706	Evaporator Tanks North of Building 374	300-31
NA	NA	300-707	Sanitizer Spill	300-33
NA	NA	300-708	Transformers North of Building 371	300-34
NA	NA	300-709	Transformer Leak 334-1	300-35
NA	NA	300-710	Gasoline Spill North of Building 331	300-36
400 AREA				
116.1	12	400-116.1	West Loading Dock, Building 447 (IAG Name: West Loading Dock Area)	400-5
116.2	12	400-116.2	South Loading Dock, Building 444 (IAG Name: South Loading Dock Area)	400-9
122	9 ¹	400-122	Underground Concrete Tank	400-11
129	10	400-129	Oil Leak	400-13
136.1	12	400-136.1	Cooling Tower Pond West of Building 444 (IAG Name: Cooling Tower Pond Northeast Corner of Building 460)	400-15
136.2	12	400-136.2	Cooling Tower Pond East of Building 444 (IAG Name: Cooling Tower Pond West of Building 460)	400-15
157.1	13	400-157.1	Radioactive Site North Area	400-17
157.2	12	400-157.2	Radioactive Site South Area	400-19

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PREVIOUSLY IDENTIFIED and NEWLY IDENTIFIED PACs

IHSS NO.	OU NO.	PAC NO.	PAC NAME	PAGE
182	10	400-182	Building 444/453 Drum Storage Area	400-22
187	12	400-187	Sulfuric Acid Spill (IAG Name: Acid Leaks (2))	400-24
191	13	400-191	Hydrogen Peroxide Spill	400-31
193	16	400-193	Steam Condensate Leak	400-32
204	15	400-204	Original Uranium Chip Roaster	400-33
205	10	400-205	Building 460 Sump #3 Acid Side	400-35
207	10	400-207	Inactive 444 Acid Dumpster	400-37
208	10	400-208	Inactive 444/447 Waste Storage Area	400-39
NA	NA	400-800	Transformer 443-1	400-40
NA	NA	400-801	Transformer, Roof of Building 447	400-41
NA	NA	400-802	Storage Area, South of Building 334	400-42
NA	NA	400-803	Miscellaneous Dumping, Building 460 Storm Drain	400-44
NA	NA	400-804	Road North of Building 460	400-45
NA	NA	400-805	Building 443 Tank #9 Leak	400-46
NA	NA	400-806	Catalyst Spill, Building 440	400-47
NA	NA	400-807	Sandblasting Area	400-48
NA	NA	400-808	Vacuum Pump Leak - Building 442	400-49
NA	NA	400-809	Oil Leak - 446 Guard Post	400-51
NA	NA	400-810	Beryllium Fire - Building 444	400-52
500 AREA				
117.1	13	500-117.1	North Site Chemical Storage	500-5
117.2	13	500-117.2	Middle Site Chemical Storage	500-6
158	13	500-158	Radioactive Site - Building 551	500-7
159	9 ¹	500-159	Radioactive Site - Building 559	500-9
169	13	500-169	Waste Drum Peroxide Burial	500-11
197	16	500-197	Scrap Metal Sites	500-13
NA	NA	500-900	Transformer Leak - 515/516	500-15
NA	NA	500-901	Transformer Leak - 555	500-17
NA	NA	500-902	Transformer Leak - 559	500-18

TABLE 3-2 (continued)
PREVIOUSLY IDENTIFIED and NEWLY IDENTIFIED PACs

IHSS NO.	OU NO.	PAC NO.	PAC NAME	PAGE
NA	NA	500-903	RCRA Storage Unit #1	500-19
NA	NA	500-904	Transformer Leak - 223-1/223-2	500-20
NA	NA	500-905	Transformer Leak - 558-1	500-22
600 AREA				
117.3	13	600-117.3	South Site Chemical Storage	600-5
120.1	12	600-120.1	Fiberglassing Area North of Building 664	600-7
120.2	12	600-120.2	Fiberglassing Area West of Building 664	600-7
152	13	600-152	Fuel Oil Tank	600-9
160	14	600-160	Radioactive Site Building 444 Parking Lot	600-11
161	14	600-161	Radioactive Site - Building 664	600-13
164.1	14	600-164.1	Radioactive Site 800 Area Site No. 2 Concrete Slab	600-15
189	12	600-189	Multiple Acid Spills 218 Tanks (IAG Name: Multiple Acid Spills)	600-16
NA	NA	600-1000	Transformer Storage Building 662	600-18
NA	NA	600-1001	Temporary Waste Storage Building 663	600-20
NA	NA	600-1002	Transformer Storage - West of Building 666	600-24
NA	NA	600-1003	Transformers North and South of 661-675 Substation	600-25
700 AREA				
118.1	8	700-118.1	Multiple Solvent Spills West of Building 730	700-9
118.2	8	700-118.2	Multiple Solvent Spills South End of Building 776	700-12
123.1	8	700-123.1	Valve Vault 7	700-14
123.2	9 ¹	700-123.2	Valve Vault West of Building 707	700-16
124.1	9 ¹	700-124.1	30,000 Gallon Tank (Tank #68)	700-18
124.2	9 ¹	700-124.2	14,000 Gallon Tank (Tank #66)	700-18
124.3	9 ¹	700-124.3	14,000 Gallon Tank (Tank #67)	700-18
125	9 ¹	700-125	Holding Tank (Tank #66)	700-20
126.1	9 ¹	700-126.1	Westernmost Out-of-Service Waste Tank	700-22
126.2	9 ¹	700-126.2	Easternmost Out-of-Service Waste Tank	700-22

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PREVIOUSLY IDENTIFIED and NEWLY IDENTIFIED PACs

IHSS NO.	OU NO.	PAC NO.	PAC NAME	PAGE
127	9 ¹	700-127	Low-Level Radioactive Waste Leak	700-24
131	14	700-131	Radioactive Site - 700 Area Site #1	700-26
132	9 ¹	700-132	Radioactive Site - 700 Area Site #4	700-28
137	8	700-137	Cooling Tower Blowdown Buildings 712 and 713 (IAG Name: Cooling Tower Blowdown Building 774)	700-30
138	8	700-138	Cooling Tower Blowdown Building 779	700-32
139.1	8	700-139.1	Caustic/Acid Spills Hydroxide Tank Area	700-34
139.2	8	700-139.2	Caustic/Acid Spills Hydrofluoric Acid Tanks	700-37
143	6	700-143	Old Outfall - Building 771 (IAG Name: Old Outfall)	700-39
144	8	700-144	Sewer Line Overflow (IAG Name: Sewer Line Break)	700-43
146.1	9 ¹	700-146.1	Concrete Process Waste Tanks 7,500 Gallon Tank (31)	700-45
146.2	9 ¹	700-146.2	Concrete Process Waste Tanks 7,500 Gallon Tank (32)	700-45
146.3	9 ¹	700-146.3	Concrete Process Waste Tanks 7,500 Gallon Tank (34W)	700-45
146.4	9 ¹	700-146.4	Concrete Process Waste Tanks 7,500 Gallon Tank (34E)	700-45
146.5	9 ¹	700-146.5	Concrete Process Waste Tanks 3,750 Gallon Tank (30)	700-45
146.6	9 ¹	700-146.6	Concrete Process Waste Tanks 3,750 Gallon Tank (33)	700-45
147.1	9 ¹	700-147.1	Process Waste Line Leaks (IAG Name: Maas Area)	700-48
149	9 ¹	700-149	Effluent Pipe	700-50
150.1	8	700-150.1	Radioactive Site North of Building 771 (IAG Name: Radioactive Leak North of Building 771)	700-52
150.2	8	700-150.2	Radioactive Site West of Buildings 771 and 776 (IAG Name: Radioactive Leak West of Building 771)	700-57
150.3	8	700-150.3	Radioactive Site Between Buildings 771 & 774 (IAG Name: Radioactive Leak Between Buildings 771 & 774)	700-59

TABLE 3-2 (continued)
PREVIOUSLY IDENTIFIED and NEWLY IDENTIFIED PACs

IHSS NO.	OU NO.	PAC NO.	PAC NAME	PAGE
150.4	8	700-150.4	Radioactive Site Northwest of Building 750 (IAG Name: Radioactive Leak East of Building 750)	700-61
150.5	8	700-150.5	Radioactive Site West of Building 707 (IAG Name: Radioactive Leak West of Building 707)	700-62
150.6	8	700-150.6	Radioactive Site South of Building 779 (IAG Name: Radioactive Leak South of Building 779)	700-63
150.7	8	700-150.7	Radioactive Site South of Building 776 (IAG Name: Radioactive Leak South of Building 776)	700-64
150.8	8	700-150.8	Radioactive Site Northeast of Building 779 (IAG Name: Radioactive Leak Northeast of Building 779)	700-66
163.1	8	700-163.1	Radioactive Site 700 Area Site No.3 Wash Area	700-67
163.2	8	700-163.2	Radioactive Site 700 Area Site No.3 Buried Slab	700-69
185	16	700-185	Solvent Spill	700-71
194	16	700-194	Steam Condensate Leak	700-72
214	10	700-214	750 Pad Pondcrete & Saltcrete Storage, Unit 25	700-73
215	9 ¹	700-215	Tank T-40, Unit 55.13	700-75
NA	NA	700-1100	French Drain North of Building 776/777	700-76
NA	NA	700-1101	Laundry Tank Overflow - Building 732	700-77
NA	NA	700-1102	Transformer Leak - 776-4	700-78
NA	NA	700-1103	Leaking Transformers - Building 707	700-80
NA	NA	700-1104	Leaking Transformers - Building 708	700-82
NA	NA	700-1105	Transformer Leak - 779-1/779-2	700-83
NA	NA	700-1106	Process Waste Spill - Portal 1	700-84
NA	NA	700-1107	Compressor Waste Oil Spill - Building 776	700-86
NA	NA	700-1108	771/774 Footing Drain Pond	700-87
NA	NA	700-1109	Uranium Incident - Building 778	700-90
NA	NA	700-1110	Nickel Carbonyl Burial West of Building 771	700-91
NA	NA	700-1111	Leaking Transformer - Building 750	700-92
NA	NA	700-1112	Leaking Transformer - 776-5	700-93
800 AREA				
102	1	800-102	Oil Sludge Pit	800-5

TABLE 3-2 (continued)
PREVIOUSLY IDENTIFIED and NEWLY IDENTIFIED PACs

IHSS NO.	OU NO.	PAC NO.	PAC NAME	PAGE
103	1	800-103	Chemical Burial	800-7
104	1	800-104	Liquid Dumping	800-8
105.1	1	800-105.1	Westernmost Out-of-Service Fuel Tanks	800-9
105.2	1	800-105.2	Easternmost Out-of-Service Fuel Tanks	800-9
106	1	800-106	Outfall	800-10
107	1	800-107	Building 881 Hillside Oil Leak (LAG Name: Hillside Oil Leak)	800-12
145	1	800-145	Sanitary Waste Line Leak	800-14
147.2	12	800-147.2	Building 881 Conversion Activity Contamination (LAG Name: Owen Area)	800-15
164.2	14	800-164.2	Radioactive Site 800 Area Site #2, Building 886 Spills	800-17
164.3	14	800-164.3	Radioactive Site 800 Area Site #2, Building 889 Storage Pad	800-19
177	10	800-177	Building 885 Drum Storage and Paint Storage (LAG Name: Building 885 Drum Storage Area)	800-21
178	15	800-178	Building 881 Drum Storage Area	800-23
179	15	800-179	Building 865 Drum Storage Area	800-24
180	15	800-180	Building 883 Drum Storage Area	800-25
211	15	800-211	Building 881 Drum Storage, Unit 26	800-26
217	15	800-217	Building 881, CN ⁻ Bench Scale Treatment, Unit 32	800-27
NA	NA	800-1200	Valve Vault 2	800-28
NA	NA	800-1201	Radioactive Site South of Building 883	800-30
NA	NA	800-1202	Sulfuric Acid Spill, Building 883	800-31
NA	NA	800-1203	Sanitary Sewer Line Break Between Buildings 865 and 886	800-32
NA	NA	800-1204	Building 866 Spills	800-33
NA	NA	800-1205	Building 881, East Dock	800-35
NA	NA	800-1206	Fire, Building 883	800-36
NA	NA	800-1207	Transformer 883-4	800-37
NA	NA	800-1208	Transformer 881-4	800-38

TABLE 3-2 (continued)
PREVIOUSLY IDENTIFIED and NEWLY IDENTIFIED PACs

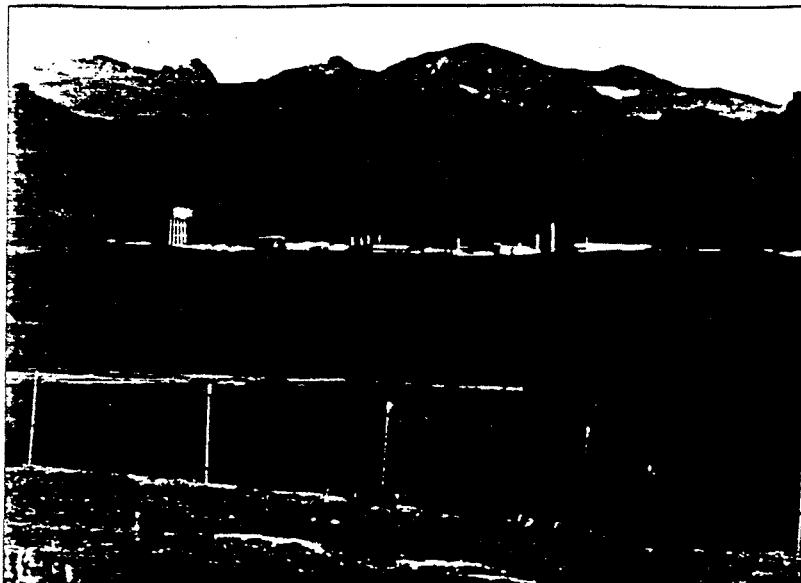
IHSS NO.	OU NO.	PAC NO.	PAC NAME	PAGE
NA	NA	800-1209	Leaking Transformers, 800 Area	800-39
NA	NA	800-1210	Transformer 865-1 and 865-2	800-40
NA	NA	800-1211	Capacitor Leak, Building 883	800-41
900 AREA				
108	2	900-108	Trench T-1	900-5
109	2	900-109	Trench T-2	900-7
112	2	900-112	903 Pad (IAG Name: 903 Drum Storage Area)	900-10
113	2	900-113	Mound Area	900-14
119.1	1	900-119.1	West Scrap Metal Storage Area (IAG Name: West Area Multiple Solvent Spills)	900-17
119.2	1	900-119.2	East Scrap Metal Storage Area (IAG Name: East Area Multiple Solvent Spills)	900-19
130	1	900-130	Radioactive Site - 800 Area Site No. 1	900-21
140	2	900-140	Hazardous Disposal Area (IAG Name: Reactive Metal Destruction Site)	900-23
141	6	900-141	Sludge Dispersal	900-25
153	2	900-153	Oil Burn Pit No. 2	900-28
154	2	900-154	Pallet Burn Site	900-30
155	2	900-155	903 Lip Area	900-31
165	6	900-165	Triangle Area	900-33
173	8	900-173	South Dock - Building 991 (IAG Name: Radioactive Site - 900 Area)	900-35
175	10	900-175	S&W Building 980 Container Storage Facility	900-37
176	10	900-176	S&W Contractor Storage Yard	900-38
183	2	900-183	Gas Detoxification Area	900-40
184	8	900-184	Building 991 Steam Cleaning Area	900-42
210	10	900-210	Unit 16, Building 980 Cargo Container	900-43
213	10	900-213	Unit 15, 904 Pad Pondcrete Storage	900-44
NA	NA	900-1300	RO Plant Sludge Drying Beds	900-47
NA	NA	900-1301	Building 991 Enclosed Area	900-48

TABLE 3-2 (continued)
PREVIOUSLY IDENTIFIED and NEWLY IDENTIFIED PACs

IHSS NO.	OU NO.	PAC NO.	PAC NAME	PAGE
NA	NA	900-1302	Gasoline Spill	900-50
NA	NA	900-1303	Natural Gas Leak	900-51
NA	NA	900-1304	Chromic Acid Spill - Building 991	900-52
NA	NA	900-1305	Building 991 Roof	900-53
NA	NA	900-1306	Transformers 991-1 and 991-2	900-54
NA	NA	900-1307	Explosive Bonding Pit	900-55
NA	NA	UBC-###	Under Building Contamination	UBC-1

¹ Based on an April 21, 1992 letter from CDH to Frazer Lockhart of the Department of Energy.

² Not Applicable



ROCKY FLATS PLANT SITE ENVIRONMENTAL REPORT

JANUARY THROUGH
DECEMBER 1992



 **EG&G ROCKY FLATS**



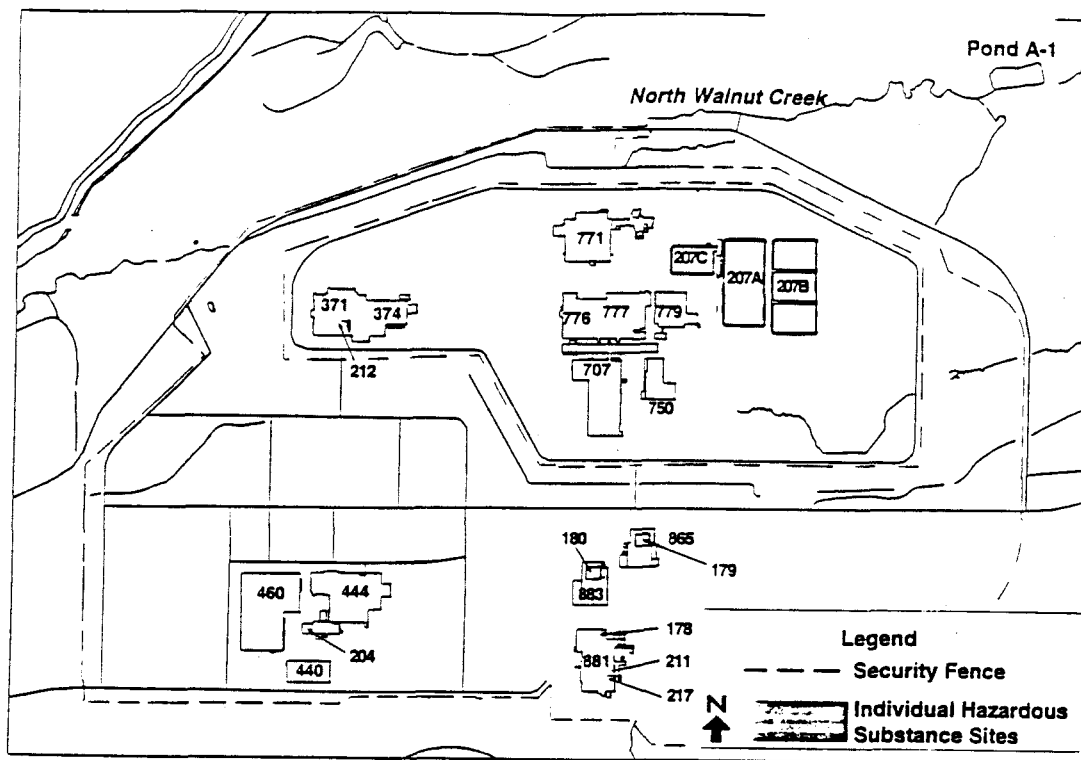


Figure 4-15. Operable Unit 15 - Inside Building Closures

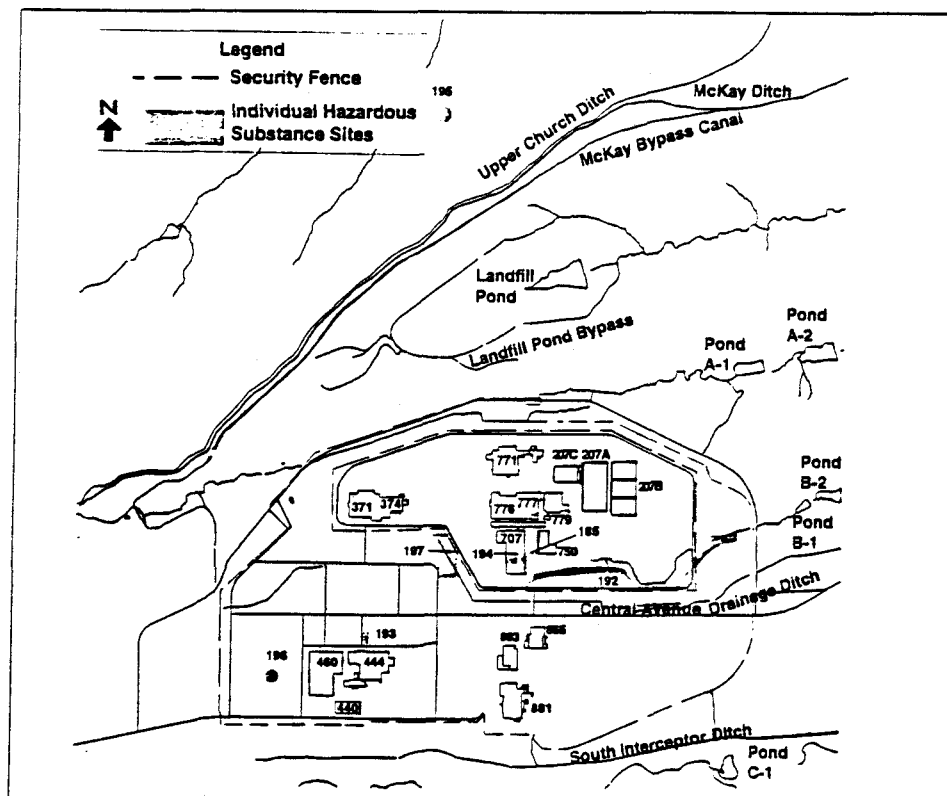


Figure 4-16. Operable Unit 16 - Low Priority Sites

STATE OF COLORADO

COLORADO DEPARTMENT OF HEALTH

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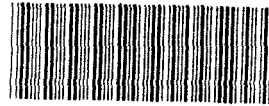
4300 Cherry Creek Dr. S. Laboratory Building
Denver, Colorado 80222-1530 12101 11th Avenue
Phone (303) 692-2000 Denver, Colorado 80220-3716
(303) 691-1700



Roy Komer
Governor

Patricia A. Nolan, MD, MPH
Executive Director

May 27, 1993



000018278

Mr. Richard J. Schassburger
U.S. Department of Energy
Rocky Flats Office, Bldg. 116
P.O. Box 928
Golden, Colorado 80402-0928

RE: Modification to Work in the IAG

Dear Mr. Schassburger,

Pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG, CDH and EPA hereby notify DOE that certain IHSSs included in Operable Unit 6 (Walnut Creek) and Operable Unit 16 (Low Priority Sites), and the investigatory and remedial work associated with them, are now to be addressed as part of alternate OUs as follows:

- IHSS 167.2, from OU 6 to OU 7 (Present Landfill);
- IHSS 167.3, from OU 6 to OU 7 (Present Landfill);
- IHSS 196, from OU 16 to OU 5 (Woman Creek);
- IHSS 197, from OU 16 to OU 13 (100 Area).

IHSSs 167.2 and 167.3 are areas that were used for spray evaporation of leachate-contaminated landfill pond water. Recent relocation of these IHSSs places both within OU 7's boundaries. Assessing the impact of spray evaporation activities around the pond is an integral part of OU 7's Phase I RFI/RI and it would be difficult to separate these poorly delineated IHSSs from those investigations. Furthermore, OU 7's field work has already performed surficial soil and subsurface soil sampling across these areas, whereas OU 6 has not.

IHSSs 196 and 197 were originally grouped into OU 16 because of the likelihood that previous remediation efforts and/or natural environmental processes at these sites have eliminated the need for any further remedial response actions. However, the Risk Assessment Analysis performed in the Final No Further Action Justification Document determined that at IHSSs 196 and 197 further investigation is warranted. This is due to the possibility that complete exposure pathways may exist because previous removal actions may not have prevented release and migration of contaminants.

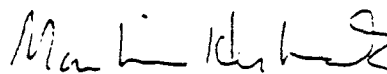
EPA and the Division consider these changes to be a modification to work associated with implementation of the IAG and are effective immediately. Although these changes were recommended by DOE, if you do not agree with any of these changes, you may invoke appropriate dispute-resolution procedures within 14 days. However, we would appreciate early notice of your disagreement so that an attempt can be made to resolve differences before dispute-resolution is invoked.

If you have any questions regarding IHSSs 167.2 and 167.3, please contact Carl Spreng (CDH) at 692-3358 or Bill Fraser (EPA) at 294-1081. For questions involving IHSSs 196 and 197, please call Jeff Swanson (CDH) at 692-3416 or Arturo Duran (EPA) at 294-1080.

Sincerely,



Gary W. Baughman, Chief
Facilities Section
Hazardous Waste Control Program



Martin Hestmark, Manager
Rocky Flats Team
EPA, Region VIII

cc: Dan Miller, AGO
Jackie Berardini, CDH-OE
Bob Birk, DOE
Norma Casteneda, DOE
Jen Pepe, DOE
Mike Arndt, EG&G
Ed Mast, EG&G
Peter Laurin, EG&G
Tim O'Roarke, EG&G
Mike McHugh, EG&G

4904 RF 93

DUE
DATE

ACTION

DIST

LTR ENC

BENEDETTI, R.L.	<input checked="" type="checkbox"/>
BENJAMIN, A.	<input type="checkbox"/>
BERMAN, H.S.	<input type="checkbox"/>
CARNIVAL, G.J.	<input type="checkbox"/>
COPP, R.D.	<input type="checkbox"/>
CORDOVA, R.C.	<input type="checkbox"/>
DAVIS, J.G.	<input type="checkbox"/>
FERRERA, D.W.	<input type="checkbox"/>
FRANZ, W.A.	<input type="checkbox"/>
HANNI, B.J.	<input type="checkbox"/>
HEALY, T.J.	<input type="checkbox"/>
HEDAH, T.G.	<input type="checkbox"/>
HILBIG, J.G.	<input type="checkbox"/>
HUTCHINS, N.M.	<input type="checkbox"/>
KIRBY, W.A.	<input type="checkbox"/>
KUESTER, A.W.	<input type="checkbox"/>
MAHAFFEY, J.W.	<input type="checkbox"/>
MANN, H.P.	<input type="checkbox"/>
MARX, G.E.	<input type="checkbox"/>
McKENNA, F.G.	<input type="checkbox"/>
MORGAN, R.V.	<input type="checkbox"/>
PIZZUTO, V.M.	<input type="checkbox"/>
POTTER, G.L.	<input type="checkbox"/>
SANDLIN, N.B.	<input type="checkbox"/>
SATTERWHITE, D.G.	<input type="checkbox"/>
SCHUBERT, A.L.	<input type="checkbox"/>
SETLOCK, G.H.	<input type="checkbox"/>
SULLIVAN, M.T.	<input type="checkbox"/>
SWANSON, E.R.	<input type="checkbox"/>
WILKINSON, R.B.	<input type="checkbox"/>
WILSON, J.M.	<input type="checkbox"/>

Keith S X

Ledford H X

Ogg R X

Peterman B X

CORRESPONDENCE CONTROL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PATS 1130G	<input type="checkbox"/>	<input type="checkbox"/>
ADMIN RECORD 030	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Reviewed for Addressee
Corres. Control RFP11-15-93
DATE

BY

Ref Ltr #

DOE ORDER # 5400.1

RECEIVED 11-15-93



Department of Energy

ROCKY FLATS OFFICE
P.O. BOX 928
GOLDEN, COLORADO 80402-0928

NOV 11 1993

GROUP

INF

LJF-021-94
Page 1 of 2

93-DOE 12643

NOV 15 1 25 PM '93

Mr. Gary Baughman
Hazardous Waste Facilities Unit Leader
Colorado Department of Health
4300 Cherry Creek Drive South
Denver, Colorado 80222-1530

Dear Mr. Baughman:

Pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the Interagency Agreement (IAG), the Department of Energy (DOE) hereby notifies the Colorado Department of Health that certain Individual Hazardous Substance Sites (IHSS) or portions of IHSS's from Operable Unit (OU) No. 9 Original Process Waste Lines (OPWL) shall be investigated for possible remediation as part of the OU-4 Solar Evaporation Ponds (SEP) Remedial Investigation/Remedial Facility Investigation (RI/RFI) and Pond Closure Interim Measures/Interim Remedial Action (IM/IRA) program. Specifically the potential OU-9 areas of concern include the following:

- 1) Those portions of IHSS 121 that are directly adjacent to the south of Pond 207A and 207B South and directly west of 207A which includes segments P26, P35, P36, P37, P38, P39, P46, P47, P48, P49 and P50.
- 2) Those portions of IHSS 149.1 that are directly adjacent to the north of Pond 207A and 207C. (Note this line empties into Pond 207A.)
- 3) Those portions of IHSS 149.2 directly adjacent to the south and east of Pond 207C. (Note this line empties into Pond 207A.)

These areas are geographically located on the enclosed schematics and diagrams.

The exact extent of how much of these lines will be remediated is unknown and under investigation at this time as is the remediation process. The remediation of these lines will be restricted to those portions that directly impact the design of the selected Pond Closure IM/IRA remedy and those that can be conveniently remediated without compromising the OU-4 schedule and budget.

In addition to the areas identified above, any other lines below the SEPs shall be addressed during the OU-4 RFI/RI or Pond Closure IM/IRA program.

The DOE's rationale for transferring these IHSSs and/or portions of IHSSs to OU-4 is due to the accelerated schedule for closure/remediation of the SEPs. The DOE's baseline assumption for closing the SEPs is the design and construction of an engineering barrier

NOV 11 1993

G. Baughman
93-DOE-12643

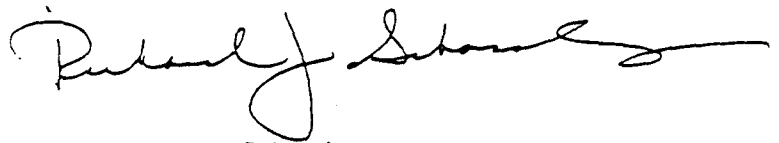
2

or RCRA cap. Therefore, based on the location of various utilities relative to the SEPs including portions of the OPWL, the engineering barrier is expected to cover these lines. The interim or final disposition of the affected lines shall be determined as part of the OU-4 IM/IRA process and will be included in the OU-4 IM/IRA Decision Document.

The DOE considers these changes to be a modification to work associated with implementation of the IAG and proposes to make these changes effective immediately.

If you have any questions or concerns regarding this matter, please contact Frazer Lockhart at 966-7846.

Sincerely,



Richard J. Schassburger
Acting Director
Environmental Restoration Division

Enclosures

cc w/Enclosures:
H. Ainscough, CDH
F. Dowsett, CDH
D. Norbury, CDH
M. Hestmark, EPA
A. Duran, EPA

cc w/o Enclosures:
H. Belencan, EM-453
J. Hartman, AMTER, RFO
F. Lockhart, ERD, RFO
S. Howard, ERD, RFO
E. O'Toole, ERD, RFO
B. Thatcher, ERD, RFO
R. Benedetti, EG&G
S. Keith, EG&G
A. Ledford, EG&G
R. Ogg, EG&G
B. Peterman, EG&G

Operable Unit	IHSS	Data Source
1	102, 103, 104, 105.1, 105.2, 106, 107, 119.1, 119.2, 130, 145	Final Phase III RFI/RI
2	108, 109, 110, 111.1, 111.2, 111.3, 111.4, 111.5, 111.6, 111.7, 111.8, 112, 113, 140, 153, 154, 155, 183, 216.2, 216.3	Historical Release Report
4	101	Historical Release Report
5	115, 133.1, 133.2, 133.3, 133.4, 133.5, 133.6, 142.10, 142.11, 209, 196	OU5 Work Plan
6	141, 142.1, 142.2, 142.3, 142.4, 142.5, 142.6, 142.7, 142.8, 142.9, 142.12, 143, 156.2, 165, 166.1, 166.2, 166.3, 167.1, 167.2, 167.3, 216.1	OU6 Work Plan
7	114, 203	Historical Release Report
8	118.1, 118.2, 123.1, 135, 137, 138, 139.1(S), 139.1(N), 139.2, 144(S), 144(N), 150.1, 150.2, 150.3, 150.4, 150.5, 150.6, 150.7, 150.8, 151, 163.1, 163.2, 172, 173, 184, 188	OU8 Work Plan
9	121, 122, 123.2, 124.1, 124.2, 124.3, 125, 126.1, 126.2, 127, 132, 146.1, 146.2, 146.3, 146.4, 146.5 146.6, 147.1, 149.1, 149.2, 159, 215	OU9 Work Plan
10	129, 170, 174, 175, 176, 177, 181, 182, 205, 206, 207, 208, 210, 213, 214	OU10 Work Plan
11	168	Historical Release Report
12	116.1, 116.2, 120.1, 120.2, 136.1, 136.2, 147.2, 157.2, 187 189	OU12 Work Plan
13	117.1, 117.2, 117.3, 128, 134(N), 134(S), 148, 152, 157.1, 158, 169, 171, 186, 190, 191, 197	OU13 Work Plan
14	131, 156.1, 160, 161, 162, 164.1, 164.2, 164.3	OU14 Work Plan
15	178, 179, 180, 204, 211, 212, 217	Historical Release Report
16	185, 192, 193, 194, 195,	Historical Release Report

STATE OF COLORADO

00292 RF 94

DUE
DATE

ACTION

DIST. LTR ENC

BENEDETTI, R.L.	
BENJAMIN, A.	
BERMAN, H.S.	
CARNIVAL, G.J.	
COOP, R.D.	
CORDOVA, R.C.	
DAVIS, J.G.	
FERRERA, D.W.	
FRANZ, W.A.	
HANNI, B.J.	
HEALY, T.J.	
HEDDAHL, T.G.	
HILBIG, J.G.	
HUTCHINS, N.M.	
KIRBY, W.A.	
KUESTER, A.W.	
MAHAFFEY, J.W.	
MANN, H.P.	
MARX, G.E.	
MCKENNA, P.G.	
MORGAN, R.V.	
PIZZUTO, V.M.	
POTTER, G.L.	
SANDLIN, N.B.	
SATTERWHITE, D.G.	
SCHUBERT, A.L.	
SETLOCK, G.H.	
SULLIVAN, M.T.	
SWANSON, E.R.	
WILKINSON, R.B.	
WILSON, J.M.	

Stiger S/Y

Bushy W/X

Ogg R/Y

Erickson O/X

CORRESP CONTROL	x	x
PATS/T130G		
ADMIN RECORD/080	2	

Reviewed for Addressee
Corres. Control RFP

1-20-94
DATE BY

Ref Ltr. #

DOE ORDER # 5400-1

COLORADO DEPARTMENT OF HEALTH

icated to protecting and improving the health and
ronment of the people of Colorado

1 Cherry Creek Dr. S. Laboratory Building
er, Colorado 80222-1530 4210 E. 11th Avenue
ie (303) 692-2000 Denver, Colorado 80220-3716
(303) 691-4700

JAN 20 2 11 PM '94

EGG
ROCKY FLATS PLANT
CORRESPONDENCE CONTROL



Roy Romer
Governor

Patricia A. Nolan, M.D.
Executive Director

January 12, 1994

Mr. Richard J. Schassburger
U.S Department of Energy
Rocky Flats Plant
Building 116
P. O. Box 928
Golden, Colorado 80402-0928

(IHSS 121)

RE: MODIFICATION OF IAG, TRANSFER OF PORTIONS OF OLD PROCESS WASTE
LINES (OPWL) FROM OPERABLE UNIT 9 (OU-9) TO OPERABLE UNIT 4
(OU-4)

Dear Mr. Schassburger,

The Colorado Department of Health, Hazardous Materials and Waste
Management Division (the Division) has received your letter of
November 11, 1993, which proposed the transfer of portions of the
Old Process Waste Lines into the Solar Evaporation Ponds operable
unit (OU-4).

The Division hereby approves of the transfer with the following
understandings and conditions:

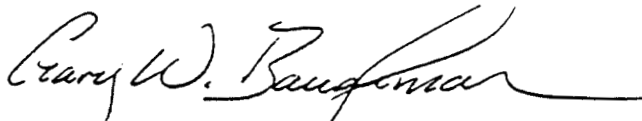
- o Although, implementation of closure actions on the waste
lines may satisfy the new milestone date of September 27,
1995 for "begin construction" (as set forth in the OU-4
dispute resolution agreement of September 30, 1993), it
is the Division's intent that closure of IHSS 101, the
solar ponds, not be delayed. To this effect, the
Division will ensure that work specific to IHSS 101
begins and is performed concurrently with work on the
waste lines to the fullest extent possible. Accordingly,
the Division and EPA will review, and as necessary,
modify the implementation schedules to be formally
proposed in the "Final IM/IRA Title II Design" document.
- o Investigations conducted under the OU-4 Phase I RFI/RI
Workplan, subject to our review of the adequacy of RFI/RI
data, are believed to have been sufficient to
characterize the releases of hazardous waste or hazardous
waste constituents resulting from possible or previous
leaks from the lines. This is based upon "process
knowledge" that the lines were used to transfer wastes
to, from, and between the ponds and that any substantive

contamination should have been detected during the OU-4 RFI/RI investigation. (Be aware, however, that DOE may have to conduct additional sampling, and soil removals, under the IM/IRA if a clean-closure alternative is pursued.)

- o Portions of the transferred lines not impinging on the successful closure of the original OU-4, or that may be best addressed under OU-9, may be transferred back to OU-9 at a later date with concurrence from the Division and EPA.

If you have any questions concerning the subject or the conditions, please call Harlen Ainscough of my staff at 692-3337.

Sincerely,



Gary W. Baughman, Chief
Facilities Section
Hazardous Waste Control Program

cc: Daniel S. Miller, AGO
Jackie Berardini, CDH-OE
Martin Hestmark, EPA
Arturo Duran, EPA
Frazer Lockhart, DOE
~~Wanda Busby~~ EG&G
Randy Ogg, EG&G
David Erickson, EG&G

Memorandum

DATE: January 26, 1994
TO: Distribution
FROM: Scott McGlochlin, Building T130J, X5587, D5227
SUBJECT: ASSIGNMENT OF IHSS's TO OUs

Following is a list of Operable Units (OUs) and the Individual Hazardous Substance Sites (IHSS's) assigned to the OUs. Source of the information is a letter from CDH, dated April 21, 1992, to Frazer Lockhart, DOE/RFO, and a list dated 5/13/92, Rev. 0. This information was confirmed with the OU managers. A list of OU managers is also attached.

Operable Unit 1: 102, 103, 104, 105.1, 105.2, 106, 107, 119.1, 119.2, 130, 145
Operable Unit 2: 108, 109, 110, 111.1, 111.2, 111.3, 111.4, 111.5, 111.6, 111.7, 111.8, 112, 113, 140, 153, 154, 155, 183, 216.2, 216.3
Operable Unit 3: 199, 200, 201, 202
Operable Unit 4: 101
Operable Unit 5: ~~115~~, ~~133.1~~, ~~133.2~~, ~~133.3~~, ~~133.4~~, ~~133.5~~, ~~133.6~~, ~~142.10~~, ~~142.11~~, (196) 209
Operable Unit 6: ~~141~~, ~~142.1~~, ~~142.2~~, ~~142.3~~, ~~142.4~~, ~~142.5~~, ~~142.6~~, ~~142.7~~, ~~142.8~~, ~~142.9~~, ~~142.12~~, ~~143~~, ~~156.2~~, ~~165~~, ~~166.1~~, ~~166.2~~, ~~166.3~~, ~~167.1~~, 216.1
Operable Unit 7: 114, ^{From W} 167.2, 167.3, 203 ^{167.2, 167.3}
Operable Unit 8: 118.1, 118.2, 123.1, 135, 137, 138, 139.1, 139.2, 144, 150.1, 150.2, 150.3, 150.4, 150.5, 150.6, 150.7, 150.8, 151, 163.1, 163.2, 172, 173, ~~184~~ 188 ^{184?}
Operable Unit 9: 121, 122, 123.2, 124.1, 124.2, 124.3, 125, 126.1, 126.2, 127, 132, 146.1, 146.2, 146.3, 146.4, 146.5, 146.6, 147.1, 149, 159, 215
Operable Unit 10: 129, 170, 174, 175, 176, 177, 181, 182, 205, 206, 207, 208, 210, 213, 214
Operable Unit 11: 168
Operable Unit 12: 116.1, 116.2, 120.1, 120.2, 136.1, 136.2, 147.2, 157.2, 187, 189
Operable Unit 13: 117.1, 117.2, 117.3, 128, 134, 148, 152, 157.1, 158, 169, 171, 186, 190, 191, 197
Operable Unit 14: 131, 156.1, 160, 161, 162, 164.1, 164.2, 164.3

Distribution
January 26, 1994
Page 2

Operable Unit 15: 178, 179, 180, 204, 211, 212*, 217

Operable Unit 16: 185, 192, 193, 194, 195

* IHSS 212 has been removed from the IAG schedule for OU15 because it is an active RCRA storage site. It is assumed that the IHSS will be investigated when the site is no longer used for storage. (Ref: D. L. Schubbe, personal conversation, 1/26/94)

Distribution

M. J. Adler
M. E. Jones
N. L. Montgomery
D. I. Shain
J. H. Vrouwes
File

ENVIRONMENTAL ASSESSMENT FOR CONSTRUCTION ACTIVITIES

Authorization No.: TG048663

Reviewer: Environmental Restoration Management/Facilities Operations
Management (ERM/FOM), T891E, x5949.

Date: April 7, 1993

OBJECTIVE:

Clean Ditches and Culverts Plantwide. This report is to serve as an addendum to add Culvert #13 and the ditches to the report completed June 3, 1992, by Tom Ottensman (see attachment #1).

JOB DESCRIPTION:

See attached.

ENVIRONMENTAL ASSESSMENT:

CULVERT #13:

The proposed construction/excavation involving Culvert #13 (see attachment #2) is not located in an Individual Hazardous Substance Site (IHSS) or Toxic Substance Control Act (TSCA) site.

ERM/FOM does not require sampling of the soil and/or water prior to or during construction/excavation activities.

DITCHES:

Many of the ditches to be dressed and cleaned are located in, or themselves comprise an Individual Hazardous Substance Site (IHSS). Those ditches are summarized below. ERM/FOM requires that all dirt, soil, gravel and rock removed from any of the ditches to be cleaned, remain on the banks of the ditch, in the immediate area from which they were originally removed. This material is to be spread and incorporated into the banks. ERM/FOM does not require sampling of the soil and/or water encountered during the construction/excavation activities.

The ditches paralleling Central Avenue are located in or near the following IHSS's (see attachment #1A):

IHSS #191, OU 13, Hydrogen Peroxide Spill (see attachment #3):

A drum of 35% Hydrogen Peroxide flowed into a culvert at the corner of Fifth Street and Central Avenue. The area of the spill is presently paved.

IHSS #157.1, OU 13, Radioactive Site North Area (see attachment #4):

Contamination associated with the handling and steaming of contaminated rags was observed in the soils around Bldg. 442. This contamination included uranium, beryllium, solvents, and radioactive metal shavings, which could have been released into the Central Avenue Ditch.

IHSS #187, OU 12, Sulfuric Acid Spill (see Attachment #5):

Some 1500 gallons of acid leaked from a tank located east of Bldg. 443, and flowed east. Some of the spill may have entered the Central Avenue ditch east of Bldg. 442.

IHSS #152, OU 13, Fuel Oil Tank 221 Spills (see attachment #6):

Past spills of No. 6 fuel oil from the tanks located on the southwest corner of Central Avenue and Seventh Street have flowed into the Central Avenue ditch.

IHSS #117.3, OU 13, Chemical Storage - South Site (see attachment #7):

Spills from a storage site located at the site of present fuel tanks 221 and 224 consisted of oils containing plutonium.

IHSS #190, OU 13, Caustic Leak (see attachment #8):

Past spills of sodium hydroxide have flowed into the Central Avenue ditch.

IHSS #113, OU 2, Mound Area (see attachment #9):

Contaminated combustible wastes, and organic liquid wastes with uranium and plutonium elements were placed in the Mound Area. The Central Avenue ditch flows through this area.

IHSS #162, OU 14, Radioactive Site - 700 Area Site #2 (see attachment #10):

Some radioactive contamination was detected in an excavation located along Eighth Street and Central Avenue. Some residual contamination may have entered the Central Avenue ditch.

IHSS #172, OU 8, Central Avenue Waste Spill (see attachment #11):

A leaking drum on a truck spilled radioactive contaminated solvents along portions of Central Avenue, some of which may have reached the ditch.

IHSS #108, OU 2, Trench T-1 (see attachment #12):

Drums of depleted uranium chips and lathe coolant were buried in a trench approximately 200 feet long, 15 feet wide, and 5 feet deep. This trench is only a few feet south of the Central Avenue Ditch.

IHSS #153, OU 2, Oil Burn Pit (see attachment #13):

Drums containing oil contaminated with uranium were burned in an open pit located north of Central Avenue and adjacent to the present Central Avenue ditch.

The ditches paralleling Sage Avenue are located in or near the following IHSS's (see attachment #14):

IHSS #128, OU 13, Oil Burn Pit No. 1 (see attachment #15):

Contaminated oil was burned in a pit located north of Bldg. 331, and the pit was later backfilled.

IHSS #134, OU 13, Metal Disposal Site North Area (see attachment #16):

Reactive metals were burned in this area, part of which is now covered by Sage Avenue.

IHSS #156.1, OU 14, Bldg. 371 Parking Lot (see attachment #17):

At one time contaminated soils may have been piled in the area now covered by the 371 parking lot.

IHSS #186, OU 13, Valve Vaults 11, 12, and 13 (see attachment #18):

Process wastes consisting of Oakite, solar pond water, and various radioactive acidic liquids have leaked into valve boxes and the surrounding soils. Some of

this contamination could have entered the ditch along the east side of Bldg. 371 parking lot.

Potential Area of Concern (PAC) #300-707, Sanitizer Spill (see attachment #18):

Approximately three gallons of sanitizer consisting of water and formaldehyde were spilled on the shoulder of the road at Sixth Street and Sage Avenue.

The ditches paralleling Seventh Street (north of Central) and 51 Drive are located in the following IHSS's (see attachment #20):

IHSS #117.2, OU 13, Middle Site Chemical Storage (see attachment #21):

Leaks and spills in this area have consisted of acids, oils, soaps, solvents, beryllium scrap, and aluminum nitrate. Any of these contaminants could have entered the drainage ditches.

IHSS #158, OU 13, Radioactive Site - Bldg. 551 (see attachment #22):

Residual contamination from leakage of waste boxes loaded onto railroad cars in the vicinity of Bldg. 551 could be present in the drainage ditches. Uranium is the contaminating constituent.

IHSS #169, OU 13, Waste Drum Peroxide Burial (see attachment #23):

Hydrogen Peroxide spills drained into a culvert at the corner of Fifth and Central Avenue, were diluted with water and buried.

The ditches paralleling Cottonwood Avenue, 44 Drive, and Seventh Street south of Central Avenue are located in the following IHSS's (see attachment #24):

IHSS #157.2, OU 12, Radioactive Site South Area (see attachment #25):

Numerous incidents of contamination releases are associated with the area around Bldg. 444. These contaminants include uranium, beryllium, solvents, and oils. The drainage ditches around the area could contain these contaminants.

IHSS #189, OU 12, Nitric Acid Tanks (see attachment #26):

Nitric acid spills have occurred in the area of the railroad tracks east of Bldg. 444, and may have contaminated soils since washed into the drainage ditches.

IHSS #160, OU 14, Radioactive Site - 444 Parking Lot (see attachment #27):

Uranium and plutonium, as well as oils and solvents, have previously been stored in the area now utilized as the 444 parking lot; and may have entered the drainage ditches east of the lot.

IHSS #136.2, OU 12, Cooling Tower Pond East of Bldg. 444 (see attachment #28):

Cooling tower cleansers were contained in ponds east of Bldg. 444 and allowed to evaporate, at which time the ponds were backfilled. The cleaning agents may have contained chromium and lithium.

IHSS #117.3, (see attachment #7 above).

WETLANDS AND ENDANGERED SPECIES:

Not applicable, per Claire Reno, NEPA Division.



ROCKY FLATS

ENVIRONMENTAL RESTORATION

FEBRUARY 1994

INTERAGENCY AGREEMENT

INTRODUCTION

In order to establish a common basis of understanding and to integrate the requirements of federal regulators for the cleanup of Rocky Flats with those of the Colorado Department of Health (CDH), an Interagency Agreement (IAG) was negotiated between the United States Department of Energy (DOE), Environmental Protection Agency (EPA), and CDH and signed on January 22, 1991. The purpose of the IAG is to establish a legally enforceable framework to facilitate coordination of cleanup and oversight efforts and to standardize requirements. The agreement establishes specific milestones and time frames for remedial actions as well as penalties for noncompliance with the agreement. The IAG document is available to the public at a number of information repositories.

The IAG establishes the parameters for cleanup of potential radioactive, hazardous, and mixed waste contamination resulting from past operations at 177 Individual Hazardous Substance Sites (IHSSs) at Rocky Flats. The goal of the Rocky Flats Environmental Restoration Program is to remediate these sites in a manner that protects the health and safety of the public and workers onsite and the environment.

OPERABLE UNIT STRUCTURE

Rocky Flats, in consultation with EPA and CDH and in response to public comment, organized the original 177 inactive IHSSs into 16 operable units (OUs) (see Figures 1 and 2).

Three factors were considered in assigning an IHSS to a particular OU: (1) geographic location, (2) type of contaminant involved, and (3) relative priority of the IHSS. Given these factors, there is considerable overlap of the OU boundaries. As provided for in the IAG, sites may be added to the IHSS list if previously unidentified potential contamination is discovered or sites may be removed as technical analysis indicates that a site no longer presents a risk to public health or the environment. Following this provision, in early FY92 the regulatory agencies in their review of RFP's Historical Release Report identified 81 potential areas of concern (PACs), potential incidents of concern (PICs), or areas of under-building contamination (UBC) not currently being addressed by RFP. RFP is developing a proposal in which most of these sites or incidents will be brought under the requirements of the IAG.

The priorities for Rocky Flats OUs were established through the IAG. DOE and EG&G technical staff, EPA, and CDH initially prioritized the OUs on the basis of available technical information; however, subsequent public comment on the IAG provided input from surrounding communities that resulted in modification of the priorities. Assessment, characterization, and remedial activities for IHSSs are carried out by OU, and the OUs form the basis for planning, scheduling, budgeting, and prioritizing environmental restoration activities. Contamination at the OUs is being assessed, and cleanup activities are being undertaken, with higher risk sites being addressed before lower risk sites.



ROCKY FLATS ENVIRONMENTAL RESTORATION

FEBRUARY 1994

OU 1 - 881 HILLSIDE

Operable Unit (OU) 1, 881 Hillside, is an element of the United States Department of Energy (DOE) Environmental Restoration (ER) Program at the Rocky Flats Plant (RFP) in Golden, Colorado.

DESCRIPTION

The alluvial ground water at the 881 Hillside Area, located north of Woman Creek in the southeast section of RFP approximately 1.5 miles from the eastern, outer edge of the plant's buffer zone, was contaminated in the 1960s and 1970s with solvents and radionuclides. The various Individual Hazardous Substance Sites (IHSSs) that make up OU 1 are being investigated and treated as high-priority sites because of potentially elevated concentrations of organic compounds in the near-surface ground water and the proximity of the contamination to the Woman Creek drainage system which leads to an offsite drinking water supply. Table I lists the IHSSs that comprise OU 1.

MAJOR CONTAMINANTS

The major contaminants encountered at the 881 Hillside include volatile organics (TCE and carbon tetrachloride) in ground water and polycyclic aromatic hydrocarbons (PAHs) in surface soils. Plutonium has been found in an isolated location.

DESCRIPTION OF WORK COMPLETED

OU ASSESSMENT

A Phase I Remedial Investigation (RI) for the 881 Hillside was completed, and a draft RI report was submitted to the Colorado Department of Health (CDH) and the Environmental Protection Agency (EPA) in 1987. A Phase II RI was also performed in 1987, and results of this investigation were presented to CDH and EPA in a draft report in March 1988. These investigations indicated the presence of volatile organic compounds (VOCs) in the shallow (alluvial) ground water system at the 881 Hillside Area and the presence of volatile and semi-volatile compounds in the soils.

The final Phase III Resource Conservation and Recovery Act (RCRA) Facilities Investigation (RFI)/RI Work Plan was submitted to EPA/CDH in October 1990, and the Phase III RI Fieldwork began in August 1991.

Phase III RI fieldwork and the required laboratory sample analysis work and data validation were completed in January 1992. The first draft of the Phase III RI Report was submitted to the regulatory agencies in October 1992. Extensive comments were received from the regulatory agencies and revisions to the document were completed in October 1993. The proposed schedule for delivery of the Final Phase III Report is under discussion. The Remedial Action (RA) Feasibility Study (FS) began in the second half of FY92 and will continue into FY94. Table II lists the LAG milestones completed through FY93.

INTERIM REMEDIAL ACTION

DOE proposed an Interim Remedial Action (IRA) to minimize the release of hazardous substances from the 881 Hillside area while the assessment process and selection of the final remedial action are conducted. The IRA prevents any potentially contaminated ground water from reaching Woman Creek.

The IRA selected by DOE, with input and review by the public, and approved by EPA and CDH, encompassed the construction of an underground drainage system called a French drain, which was designed to intercept and contain contaminated near-surface ground water from OU 1. The collected water is transferred to an onsite treatment facility for removal of VOCs, radionuclides, and metals. After treatment and testing, the water is released onsite into the South Interceptor Ditch. Water collected from this ditch then undergoes a secondary analysis prior to release. Construction of the treatment building, which began in November 1989, and excavation of the French drain, which began in October 1991, is now complete, and the facility is in full operation.

An Environmental Assessment (EA) for the planned OU 1 was completed in 1990.

Ground water collected by the French drain is undergoing ultraviolet (UV)/peroxide treatment to remove VOCs, and treatment by an ion exchange system to remove the metals and radionuclides. Through the end of FY93, the OU 1 IRA has collected, treated, and released over one and a half million gallons of ground water from the 881 Hillside Area.

FUTURE PLANS

The RI/FS process, which will lead to a Record of Decision (ROD) on the final remedy for OU 1, will continue. It is anticipated that the final remedial action (RA) will integrate the IRA and provide for cleaning, removing, or stabilizing contamination in the soil to prevent further spread to the environment. The scope of the RA will be determined in the ROD based on the results of the RI and FS. Operation of the IRA to treat ground water will continue until it is integrated into the final remedial action. Table III lists the OU 1 LAG milestones planned for FY94 and the first half of FY95.

TABLE I: OU 1 INDIVIDUAL HAZARDOUS SUBSTANCE SITES

<u>IHSS</u>	<u>Site Name</u>
102	Oil Sludge Pit
103	Chemical Burial Area
104	Liquid Dumping Pit
✓ 105.1	Out-of-Service Fuel Tank - West Tank
105.2	Out-of-Service Fuel Tank - East Tank
106	Outfall
107	Hillside Oil Leak
119.1	Multiple Solvent Spills - West Area
119.2	Multiple Solvent Spills - East Area
130	Radioactive Site - 800 Area Site #1
145	Sanitary Waste Line Leak

TABLE II: OU 1 IAG MILESTONES COMPLETED THROUGH FY93

<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Extension Date</u>	<u>Date Accomplished</u>
Submit Draft Proposed IM/IRA Decision Document	September 18, 1989		September 18, 1989
Submit Proposed IM/IRA Decision Document	October 6, 1989		October 6, 1989
Submit Final IM/IRA Decision Document	January 5, 1990		January 5, 1990
Begin Phase I-A IM/IRA Construction	January 15, 1990		January 15, 1990
Begin Phase I-B IM/IRA Construction	October 8, 1990		September 28, 1990
Submit IM/IRA Implementation Document	February 22, 1991		February 22, 1991
Begin Phase II-A IM/IRA Construction	April 1, 1991		April 1, 1991
Begin IM/IRA Testing	August 5, 1991		August 5, 1991
Begin Phase II-B IM/IRA Construction	September 3, 1991		September 3, 1991
Complete IM/IRA Construction	March 2, 1992	April 13, 1992	April 13, 1992
Submit Draft Phase III RFI/RI Work Plan	February 6, 1990		February 6, 1990
Submit Final Phase III RFI/RI Work Plan	October 30, 1990		October 31, 1990
Submit Draft Phase III RFI/RI Report	July 30, 1992	October 28, 1992	October 28, 1992

TABLE III: OU 1 IAG MILESTONES PLANNED FOR FY94 AND THE FIRST HALF OF FY95

<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Extension Date</u>
Submit Final Phase III RFI/RI Report	January 4, 1993	Pending
Submit Draft CMS/FS Report	March 31, 1993	August 25, 1994
Submit Final CMS/FS Report	September 27, 1993	November 22, 1994
Submit Draft PP	September 27, 1993	November 22, 1994
Submit Final PP	January 4, 1994	February 24, 1995
Submit Draft Responsiveness Summary	May 6, 1994	June 23, 1995
Submit Final Responsiveness Summary	August 3, 1994	September 22, 1995
Submit Draft CAD/ROD	August 3, 1994	September 22, 1995
Submit Final CAD/ROD	November 1, 1994	December 22, 1995



ROCKY FLATS ENVIRONMENTAL RESTORATION

FEBRUARY 1994

OU 2 - 903 PAD, MOUND, & EAST TRENCHES

Operable Unit (OU) 2, 903 Pad, Mound, and East Trenches, is an element of the United States Department of Energy (DOE) Environmental Restoration Program at the Rocky Flats Plant (RFP) in Golden, Colorado.

DESCRIPTION

The 903 pad, mound, and east trenches areas of OU 2 are located on the east side of the RFP Industrial Area (IA). The 20 Individual Hazardous Substance Sites (IHSSs) which comprise OU 2 are listed in Table I and are shown on the map of OU 2.

The contamination at the 903 Pad and Mound areas is attributed to the storage of drums during

the 1950s and 1960s containing waste that corroded over time, allowing hazardous and radioactive material to leak into the surrounding soil. Additional dispersion may have been caused by wind during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas near the trenches were used for spray irrigation of sewage treatment plant effluent, some of which may have had contaminants that were not removed by the treatment system.

The major contaminants at the 903 Pad, Mound, and East Trenches area include volatile organic compounds (VOCs), radionuclides (U, Pu, & Am), and biological (bacterial) wastes.

TABLE I: OU 2 INDIVIDUAL HAZARDOUS SUBSTANCE SITES

<u>IHSS</u>	<u>Site Name</u>	<u>IHSS</u>	<u>Site Name</u>
108	Trench T-1	112	903 Drum Storage Area
109	Trench T-2	113	Mound Area
110	Trench T-3	140	Reactive Metal Destruction
111.1	Trench T-4	153	Oil Burn Pit No. 2
111.2	Trench T-5	154	Pallet Burn Site
111.3	Trench T-6	155	903 Lip Area
111.4	Trench T-7	183	Gas Detoxification Area
111.5	Trench T-8	216.2	East Spray Field - Center Area
111.6	Trench T-9	216.3	East Spray Field - South Area
111.7	Trench T-10		
111.8	Trench T-11		

DESCRIPTION OF WORK COMPLETED

ASSESSMENT

A Phase I Remedial Investigation (RI) for OU 2 was completed in 1989. Work Plans for the Phase II Alluvial and Bedrock RIs were approved by the regulatory agencies (EPA and CDH) in 1990 and 1991, respectively. These Work Plans describe the boreholes, wells, seismic surveys, hydraulic testing, soil sampling, gamma surveys, and environmental (ecological) evaluation sampling necessary to complete the RI.

The Phase II RI alluvial field activities and laboratory analyses for the alluvial program were completed in the fourth quarter of FY92. The Bedrock fieldwork was deferred in FY92 because of other program priorities and because the eventual scope of the Bedrock characterization was influenced by the findings of the Alluvial characterization. A revised Bedrock Work Plan, which reduced the number of wells, was completed in the first half of FY93. The Bedrock field program was completed in the fourth quarter of FY93.

In June 1993, the regulatory agencies directed DOE to stop work on OUs 1 through 7 for: 1) aggregation of RI data for the purpose of comparing background concentrations to select contaminants of concern (COCs) for the Human Health Risk Assessment (HHRA), and 2) aggregation of data for the purpose of conducting an exposure assessment. Work has stopped until an agreement is reached among the parties to the IAG for guidance on the methodology to proceed on these two issues. The stop work order prevents completion of the HHRA and subsequent Resource Conservation and Recovery Act (RCRA) Facilities Investigation (RFI)/RI Report. Other portions of the Risk Assessment, including data evaluation, identification of exposure scenarios, selection of

exposure parameters, and ecological effects assessment are proceeding as scheduled. Ground water and air monitoring are planned to continue for one year.

A preliminary draft of the Phase II RI Report, excluding the Baseline Risk Assessment (BRA), is complete. The preliminary draft was submitted to the agencies for review and comment on December 16, 1993. The RI Report will provide data for the Feasibility Study/Treatability Study (FS/TS) in which the final action to remediate contaminated portions of soil, surface water, ground water, and seeps will be proposed. FS work started in October, 1993. The FS is continuing with initiation of the Programmatic FS team. This team is coordinating FS activities for OUs 2, 3, and 6.

SURFACE WATER IM/IRA

The OU 2 Surface Water Interim Measure/Interim Remedial Action (IM/IRA) incorporates FS/TS elements that will study methods to remove contaminants from seeps and surface water in the South Walnut Creek Basin north of the Mound Area. This facility includes temporary collection sumps, pumps, transfer pipelines, holding tanks, a trailer-mounted granular activated carbon (GAC) filtration system, and a trailer-mounted chemical precipitation/microfiltration system designed to remove VOCs, metals, and radionuclide contamination from the water collected.

Treatment for VOCs using activated carbon began May 13, 1991. The radionuclide removal system was added to the system and began operation in April of 1992. The final Surface Water IM/IRA Treatability Study Report was submitted in January 1994 and is being reviewed by the regulatory agencies. To date, the system has collected, treated, and discharged over 18.5 million gallons of surface water from the Walnut Creek drainage. DOE is requesting approval to discontinue collection

and treatment of two of the three sources. Two of the sources are at or below Applicable or Relevant and Appropriate (ARAAR) standards.

FUTURE PLANS

SUBSURFACE IM/IRA

Under an agreement with EPA and CDH, a second IM/IRA was established in late 1991. This OU 2 IM/IRA will evaluate soil vapor extraction technology for removal of residual free-phase VOC contamination from three subsurface areas in the vadose zones of OU 2.

The Subsurface IRA Plan was approved by EPA/CDH in September 1992. The Mobile Soil Vapor Extraction (MSVE) Unit was accepted by RFP in August 1993. A scope of work was developed for reconfiguration of the MSVE pilot plant to allow for operation in the presence of high concentrations of Non-Aqueous Phase Liquids (NAPLs). Construction was complete and pilot testing of the SVE began on February 17, 1994.

Work is continuing on the draft Phase II Resource Conservation and Recovery Act (RCRA) Facilities Investigation (RFI)/RI Report for the non-Risk Assessment (RA) related sections. The ground water model used for the RI Report is being developed. The Surface Water IM/IRA will continue to collect, treat and discharge surface water. The Subsurface IM/IRA will proceed with development of test plans for selected OU 2 sites. Work on the Feasibility Study will continue, an FS Report will be prepared, and the Environmental Assessment (EA) will be conducted. These activities will lead to a Record of Decision (ROD) for OU 2. The extent of the RA will be determined by results of the RI and FS and will be specified in the ROD. Table III lists the OU 2 LAG milestones planned for FY94 and the first half of FY95.

TABLE II: OU 2 LAG MILESTONES COMPLETED THROUGH FY93

LAG Milestone Description	Original Table 6 Date	Extension Date	Date Accomplished
Submit Draft Proposed IM/IRA Decision Document	June 19, 1990		June 19, 1990
Submit Proposed IM/IRA Decision Document	September 18, 1990		September 18, 1990
Submit Draft Responsiveness Summary	December 13, 1990		December 13, 1990
Submit Final Responsiveness Summary and Final IM/IRA Decision Document	January 11, 1991		January 11, 1991
Field Treatability Test System Installation Complete	March 8, 1991	May 10, 1991	May 10, 1991
Begin Field Treatability Testing	March 11, 1991	May 13, 1991	May 13, 1991
Complete IM/IRA Construction	September 30, 1991	April 24, 1992	April 24, 1992
Begin Field Treatability Testing (Entire System)	October 30, 1991	April 27, 1992	April 27, 1992
Submit Draft Treatability Test Report Phase I (GAC)	April 1, 1992		April 1, 1992
Submit Final Treatability Test Program Report Phase I (GAC)	June 2, 1992		June 2, 1992
Submit Draft Phase II RFI/RI Work Plan (Alluvial)	December 21, 1989		December 21, 1989
Submit Final Phase II RFI/RI Work Plan (Alluvial)	April 12, 1990		April 12, 1990
Submit Draft Phase II RFI/RI Work Plan (Bedrock)	February 5, 1991		February 5, 1991
Submit Final Phase II RFI/RI Work Plan (Bedrock)	July 2, 1991		July 2, 1991
Submit Subsurface Site 1 Draft Test Plan			October 29, 1992
Submit Subsurface Site 1 Final Test Plan			January 12, 1993
Submit Subsurface Site 2 Draft Test Plan			June 24, 1993
Submit Draft Surface Water Field Treatability Report			July 13, 1993

TABLE III: OU 2 IAG MILESTONES PLANNED FOR FY94 AND THE FIRST HALF OF FY95

<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Extension Date</u>
Submit Draft Phase II RFI/RI Report	March 12, 1993	Pending*
Submit Final Phase II RFI/RI Report	August 9, 1993	Pending*
Submit Draft CMS/FS Report	November 4, 1993	Pending*
Submit Final CMS/FS Report	May 10, 1994	Pending*
Submit Draft Proposed Plan (PP)	May 10, 1994	Pending*
Submit Final Proposed Plan (PP)	August 9, 1994	Pending*
Submit Draft Responsiveness Summary	December 13, 1994	Pending*
Submit Draft CAD/ROD	March 16, 1995	Pending*
Submit Final Responsiveness Summary	March 16, 1995	Pending*

* Extension pending as a result of agency imposed stop work order



ROCKY FLATS ENVIRONMENTAL RESTORATION

FEBRUARY 1994

OU 3 - OFFSITE AREAS

Operable Unit (OU) 3, the Offsite Areas, is comprised of that portion of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) activities that address the land adjacent to the Department of Energy (DOE) Rocky Flats Plant (RFP) near Golden, Colorado, and the public water supply reservoirs near RFP.

DESCRIPTION

Operable Unit 3, Offsite Areas, consists of two surface areas: 350 acres of land directed to be remediated by the settlement of an 1985 lawsuit (McKay vs. U. S.); and three public water supply reservoirs. In addition, the Interagency Agreement (IAG) directs that assessment of contamination of these areas be undertaken according to the CERCLA. Figure 1 is a map showing the three resources: Standley Lake, Great Western Reservoir, and Mower Reservoir. In the case of the 350 acres of land, DOE agreed to remediate these lands by deep disc plowing beginning in 1985 and followed by revegetation. The overall schedule for activities is determined by the year-to-year success of the revegetation efforts, which has been mediocre thus far, and by the requirements of the landowners. Plowing activities directed by the Settlement Agreement have been suspended until the CERCLA process is complete.

MAJOR CONTAMINANTS

The major contaminants in the OU 3 investigation are low-level radionuclides (plutonium, americium, and uranium)

that decrease with distance from the eastern boundary of RFP.

DESCRIPTION OF WORK COMPLETED

IAG Directed Work

The Final Remedy Report for OU 3 was approved by the Environmental Protection Agency (EPA) and the Colorado Department of Health (CDH) in 1991. The Remedy Report presented a summary of historical data and a preliminary Health Risk Assessment (HRA) for contaminated offsite soils. The Final Historical Information Summary and Preliminary Health Risk Assessment Report was also approved by EPA and CDH in 1991. This report is a companion document with the Remedy Report presenting information on offsite reservoirs. Table II contains a list of all IAG milestones completed through FY93. Field work, as directed by the regulatory agency-approved Remedial Investigation (RI) Work Plan, began in 1992. The surface soil sampling portion of the field work was completed in June 1993, and the remaining Wind Tunnel field work was completed in July 1993. Offsite landowners will be informed of the laboratory analysis results of soil samples obtained from their property.

In June 1993, the regulatory agencies directed DOE to stop work on OUs 1 through 7 to:

- 1) aggregation of RI data for the purpose of comparing background concentrations to select contaminants of concern (COCs) for the Human Health Risk Assessment (HHRA), and

2) aggregation of data for the purpose of conducting an exposure assessment. Work has stopped until an agreement is reached among the parties to the IAG for guidance on the methodology to proceed on these two issues. The stop work order prevents completion of the HHRA and subsequent Resource Conservation and Recovery Act (RCRA) Facilities Investigation (RFI)/RI Report. Other portions of the Risk Assessment, including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological effects assessment are proceeding as scheduled. Ground water and air monitoring are planned to continue for one year.

- To answer land use questions with OU 3, DOE developed an interim document identifying an area of concern (AOC) within the OU 3 study area. This document identifies a small area of approximately 250 acres adjacent to Indiana Street opposite the RFP east gate where soil contamination exceeds levels that would be regarded as safe, based on judgements of acceptable risk. This document was approved by EPA in October 1993. This is an area where activities such as land development, construction, and recreation may need restriction due to soil contamination.

SETTLEMENT AGREEMENT DIRECTED WORK

- Remediation and revegetation activities are currently required on approximately 200 of the 350 acres covered under the lawsuit agreement. Remedial activities are not required on the remaining 150 acres until requested by the owner. Of the total acreage, 100 acres are in active revegetation. In 1991, approximately 80 acres of disturbed soil from the 1985 remediation tilling were revegetated with a native seed mix and mulched to protect the soil surface. Semi-annual reports to the landowner are written in

January and July on Settlement Agreement activities. The site is monitored for weed control and revegetation success. DOE transmitted the Summer Biannual Report to Jefferson County Open Space, owner of the property. In addition, weed control actions on the Jefferson County Settlement Agreement began September 8, 1993, with mowing of selected areas. This work required three days to complete.

FUTURE PLANS

IAG DIRECTED ACTIVITIES

Work has begun in the Fall of 1993 on the draft RFI/RI Report, which will contain an assessment of the nature and extent of contamination along with a Baseline Risk Assessment (BRA). The data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological affects assessment portions of the Risk Assessment are proceeding as scheduled. A Feasibility Study (FS) Work Plan has been initiated in FY94, followed by the FS-process with data analysis and preparation of the FS Report and Environmental Assessment (EA) to determine Final Actions. The completion of these reports will be delayed due to the work stoppage discussed above. Table III lists the OU 3 IAG milestones planned for FY94 and the first half of FY95.

SETTLEMENT AGREEMENT DIRECTED

The January semi-annual report to Jefferson County documenting remedial action activities has been delivered. Results of negotiations with landowners will determine future actions on Settlement Agreement lands.

TABLE I: OU 3 INDIVIDUAL HAZARDOUS SUBSTANCE SITES

<u>IHSS</u>	<u>Site Name</u>
199	Contamination of the Land's Surface
200	Great Western Reservoir
201	Standley Reservoir
202	Mower Reservoir

TABLE II: OU 3 IAG MILESTONES COMPLETED THROUGH FY93

<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Extension Date</u>	<u>Date Accomplished</u>
Submit Draft Past Remedy Report	October 26, 1990		October 26, 1990
Submit Draft Historical Information and Preliminary Health Risk Assessment Report	November 9, 1990		November 9, 1990
Submit Final Past Remedy Report	April 2, 1991		April 2, 1991
Submit Final Historical Information and Preliminary Health Risk Assessment Report	April 16, 1991		April 16, 1991
Submit Draft Phase I RFI/RI Work Plan	May 16, 1991	July 10, 1991	July 10, 1991
Submit Final Phase I RFI/RI Work Plan	October 11, 1991	December 6, 1991	December 6, 1991

TABLE III: OU 3 IAG MILESTONES PLANNED FOR FY94 AND THE FIRST HALF OF FY95

<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Extension Date</u>
Submit Draft Phase I RFI/RI Report	July 16, 1993	February 14, 1994
Submit Final Phase I RFI/RI Report	December 13, 1993	October 21, 1994



ROCKY FLATS ENVIRONMENTAL RESTORATION

FEBRUARY 1994

OU 4 - SOLAR PONDS

Operable Unit (OU) 4, Solar Ponds, is an element of the United States Department of Energy (DOE) Environmental Restoration Program at the Rocky Flats Plant (RFP) in Golden, Colorado.

DESCRIPTION

Operable Unit 4 comprises five solar evaporation ponds: 207A, 207B series (North, Center, South), and 207C located in the northeast part of RFP's protected area. The only individual hazardous substance site (IHSS) in OU 4 is IHSS 101. In the late 1950s, the ponds were used to store and evaporate low-level radioactive process water containing high concentrations of nitrates and treated acidic wastes.

In the 1960s and 1970s, the ponds were relined with various upgraded materials; however, leakage from the ponds into the soil and ground water was suspected. Interceptor trenches were installed in 1971 to collect and recycle ground water contaminated by the ponds and to prevent natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were upgraded to the current, larger interceptor trench system (ITS), which until recently had continuously recycled approximately three to four million gallons of ground water a year back into the solar evaporation ponds.

No additional process water has been pumped into the ponds since 1986. And with the diversion of the ITS water to storage tanks in April 1993, ground water is no longer returned to the ponds. The Resource Conservation and Recovery Act (RCRA) and Comprehensive

Environmental Response, Compensation, and Liability Act (CERCLA) investigation fieldwork under the Rocky Flats Interagency Agreement (IAG) began in FY93, and remediation will continue through construction of the final corrective/remedial action in FY00 (2000). The contaminants identified in OU 4 include nitrates, chromium, tritium, cadmium, Am 241, and Pu 239.

DESCRIPTION OF WORK COMPLETED

The Solar Evaporation Ponds Subproject (SPP) encompasses four major tasks: remix of non-certifiable pondcrete and saltcrete and pond sludge processing per the Agreement in Principle between DOE and Colorado Department of Health (CDH); water management/treatment per the Interim Measure Interim Remedial Action (IM/IRA) Decision Document (DD) signed by DOE, Environmental Protection Agency (EPA), and CDH; the OU 4 assessment and remedial action required by the IAG; and pad operations, storage, and disposal activities which are necessary to meet the plant's RCRA interim status and permit requirements with regard to storage of pond wastes. The water management and pond sludge cleanout are necessary precursors to OU 4 assessment and remediation, and pad operations are necessary support activities at least until the pond sludge waste is properly treated and disposed.

The four major tasks were planned to close the ponds and remediate the ponds' area. In roughly chronological sequence, the project was scoped to remove water from the ponds; provide

a treatment facility to replace the ponds as treatment and storage units for ponds-related contaminated ground water; remove and dispose of pond sludge in compliance with all regulations such as the land disposal restrictions (LDR) of RCRA; assess the nature and extent of contamination at the ponds; complete a RCRA closure of the impoundments; and remediate the ponds area as needed.

Uncertainty over the availability of the planned disposal site in Nevada, the high cost of storing processed sludge, the risk of a change in waste acceptance criteria, and high cost projections for the total program have led DOE and EG&G to reevaluate the previous approach for cleaning out and stabilizing the liquids and sludges present in the ponds.

The SPP analyzed various alternative waste stream storage, and disposal approaches with respect to technical feasibility, completion dates regarding regulatory drivers, total program cost, and flexibility to determine the most viable approach for accomplishing the objectives of the program. All approaches had a common objective of eliminating the pond sludge as a potential source of contaminants to the ground underneath the ponds and to adjacent ground water.

Based on the analysis, DOE and EG&G concluded that the baseline approach (cementation of the C pond sludge in FY94, the B pond sludge in FY95, and the currently stored/failing pondcrete and saltcrete after a disposal site opens) is less prudent than several other approaches. This would preclude pursuit of less costly approaches, has a high cost for treating a relatively low-hazard material, and has scheduling and reprocessing risks associated with the availability of the repository. Removing the sludge and temporarily storing it defers the ultimate treatment and disposal. Consolidating the sludge as much as possible and then temporarily storing it in tanks would adequately minimize or eliminate

the potential for environmental contamination while preserving the possibility of pursuing potentially more attractive alternatives for final disposition of the wastes.

The SPP program office formulated a revised program that has the following major features:

- Consolidate the contents of the five ponds into two ponds. (Done August 1993)
- Transfer the pond contents to tanks for interim storage. (In progress)
- Pursue a treatability study on the existing, stored pondcrete and saltcrete to be prepared to accelerate the schedule for processing (current plan is cementation) and offsite disposal if a site becomes available sooner than anticipated.
- Close the ponds and remediate OU 4.
- Continue the current actions under way to treat contaminated ground water and store wastes safely.
- Investigate cheaper sludge treatment option.

WORK PLANNED FOR FY94

- Continue routine operation of 750 and 904 Storage Pads.
- Begin preparation of the Phase II RCRA Facility Investigation (RFI)/RI Work Plan and pond closure study (IM/IRA).
- Complete drilling and sampling of Ponds 207B South and 207C in support of the RFI.
- Complete IM/IRA DD with final approval in early January 1995.
- Begin Title II Design for the OU 4 closure and Phase I remedy.
- Begin Phase II RCRA facility investigation.
- Remove water and sludge from all Solar Ponds and store in tanks for future processing.
- Treat ITS water as necessary.
- Maintain safe and compliant storage for Solar Pond wastes.
- Place Building 910 in standby condition.

CURRENT STATUS AND ACCOMPLISHMENTS

During the first half of FY93, in-progress activities to implement the water management Interim Measure/Interim Remedial Action (IM/IRA), which had missed three decision document milestones in FY92, were replanned and rescheduled. New commitment dates were provided to the DOE and the regulators, and the modular storage tanks to accept the ITS water were completed and placed in operation six days ahead of their commitment date. The tanks allowed EG&G to terminate the return of contaminated ground water to the ponds. The water stored in these tanks is now being processed in Building 374 evaporation-treatment facilities.

The largest pond impoundment, Pond 207A, and two of the three smaller 207B impoundments, have been emptied of sludge and waste water. These wastes are now consolidated in 207B South. The assessment field work for the OU 4 remediation work is nearing completion, with work-arounds having been negotiated with the regulators to allow the assessment effort to resume meeting the IAG schedule after slipping two milestones in FY93. A compliance plan has been prepared to return the storage pads to full RCRA compliance. These pads still store about half of the pondcrete produced in earlier years; the other half, about 9,000 blocks, was shipped to the Nevada Test Site (NTS) for disposal prior to 1990 when NTS ceased receipt of mixed wastes.

The draft Phase I RFI/RI Report was due May 21, 1993. A letter requesting an extension to April 19, 1994 was submitted to the regulatory agencies on May 5, 1993. The regulatory agencies granted a 79-working day extension but DOE was not satisfied and initiated the "dispute resolution" process in accordance with the IAC.

Subsequently, the regulatory agencies and DOE reached an agreement to resolve the OU 4 Solar Ponds dispute concerning the draft and final Phase I RFI/RI Report. The agreement includes the following provisions: 1) the requirements for a separate draft and final Phase I RFI/RI Report for OU 4 are eliminated in favor of consolidating the report and the IM/IRA DD, thus the milestone dates are deleted, 2) a new IAG milestone is established for "all Solar Ponds emptied of water and sludge" with an IAG milestone date of January 20, 1995, and 3) the IAG milestones are revised as shown in Table II. Generally, the administrative and design processes were consolidated. A total acceleration of 16 months from the original IAG to start of Phase I Remediation construction was realized.

DOE and EG&G agreed on the methodology for the removal and storage of the remaining water and pond sludge in Ponds 207B South and 207C. The sludge will be sucked from the ponds using industrial vacuum tanker trucks and stored in high density polyethylene tanks in tents on the 750 Pad. Shipments of the Pond Sludge Storage Tanks began in December, 1993, and were completed in mid-February, 1994. A total of 70 tank sets have been delivered. Thus far, nearly 40 have been tested and all passed required acceptance criteria. The remaining tanks continue to be tested. Vacuum pumping operations of sludge began February 7, 1994, in Pond 207B South. Despite initial slow progress due to harsh weather and equipment difficulties, progress continues ahead of the IAG commitment schedule. Completion of sludge removal is expected in April, 1994. Pond 207C sludge removal operations will begin subsequently. Increased productivity is expected in the coming months with the certification of a second vacuum pump tanker truck and improved weather conditions.

Preparation of the Interim Measure/Interim Remedial Action Environmental Assessment Decision Document (IM/IRA EA DD) is

proceeding on schedule. Sections of the proposed draft document commenced delivery to DOE and the regulatory agencies on February 14, 1994.

DOE, the regulatory agencies, and subcontractor representatives are developing the specific criteria which must be met in order to designate the OU 4 remediation site as a Corrective Action

Management Unit (CAMU). Designation of the site as a CAMU and application of the regulatory flexibility provided under the CAMU rule are key elements for economic and timely remediation of the site. Since this will likely be the first application of the state's yet-to-be-enacted version of the CAMU regulations, close cooperation between all parties is essential to gain confidence in this new law and to its successful application to OU 4.

TABLE I: OU 4 IAG MILESTONES COMPLETED THROUGH FY93

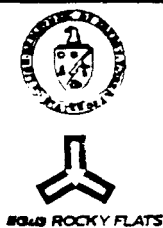
<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Extension Date</u>	<u>Date Accomplished</u>
Submit Draft Phase I RFI/RI Work Plan	June 8, 1990		June 8, 1990
Submit Final Phase I RFI/RI Work Plan	November 26, 1991		November 26, 1991

TABLE II: OU 4 IAG MILESTONES PLANNED FOR FY94 AND THE FIRST HALF OF FY95

<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Acceleration Date</u>
Submit Draft Phase I RFI/RI Report	May 21, 1993	Deleted
Submit Final Phase I RFI/RI Report	October 18, 1993	Deleted
Submit Draft Phase I Proposed IM/IRA Decision Document	April 14, 1994	No change
Submit Draft Phase II RFI/RI Work Plan	April 22, 1994	No change
Submit Phase I Proposed IM/IRA Decision Document	September 12, 1994	June 24, 1994
Submit Final Phase II RFI/RI Work Plan	September 19, 1994	No change
Submit IM Design Work Plan	May 24, 1995	Deleted
All Solar Ponds Emptied of Water and Sludge	New	January 20, 1995
Submit IM/IRA Responsiveness Summary	January 25, 1995	November 1, 1994
Submit Final IM/IRA Decision Document and Responsiveness Summary	April 24, 1995	January 13, 1995
Submit Final IM/IRA Title II Design	June 24, 1996	February 10, 1995

TABLE III: IM/IRA MILESTONE STATUS

<u>Milestone Description</u>	<u>Original Date</u>	<u>Revised Date</u>	<u>Status</u>
Begin const. of Treatment and Storage System	March 1, 1992	April 6, 1992	Completed
Complete const. of Treatment and Storage Sys.	June 1, 1992	July 7, 1993	Completed
Conduct Trial Run of Treatment System	June 8, 1992	June 28, 1993	Completed
Begin Full-Scale Operations of Treatment System	June 8, 1992	September 9, 1993	Completed
Diversion of ITS Water	April 16, 1993	April 8, 1993	Completed



ROCKY FLATS ENVIRONMENTAL RESTORATION

FEBRUARY 1994

OU 5 - WOMAN CREEK

Operable Unit (OU) 5, Woman Creek Priority Drainage, is an element of the United States Department of Energy (DOE) Environmental Restoration Program at the Rocky Flats Plant (RFP) in Golden, Colorado. Woman Creek, flowing from west to east across the southern third of Rocky Flats, collects and drains surface water, including runoff from the extreme southern part of the RFP Industrial Area, and eventually flows into Mower Reservoir and Standley Lake.

DESCRIPTION

Operable Unit 5 encompasses assessment and remediation in the Woman Creek drainage of the 10 Individual Hazardous Substance Sites (IHSSs). Two additional surface disturbances have been identified, and one is located south of the ash pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. Possible contamination in this OU was caused by early DOE Rocky Flats Office (RFO) landfill operations, storm water runoff into holding ponds, and ash pit operations.

MAJOR CONTAMINANTS

Identified major contaminants include solvents, paints, paint thinner, oil, pesticides, cleaners, beryllium, uranium, depleted uranium, graphite, ash from plant waste, metals, radium, gross alpha, plutonium, nitrates, and nonradioactive hazardous chemical waste.

DESCRIPTION OF WORK COMPLETED

OU ASSESSMENT

The Phase I Remedial Investigation (RI) statement of work, proposals, and contract negotiations were completed in 1990. The draft Phase I RI Work Plan and the final RI Work Plan have been submitted, and conditional approval from the agencies was received in February 1992. Table II lists the Interagency Agreement (IAG) milestones completed through FY93. Phase I Resource Conservation Recovery Act (RCRA) Facility Investigation (RFI)/RI field work was completed on August 31, 1993, except for routine water well and well point monitoring.

In June 1993, the regulatory agencies directed DOE to stop work on OUs 1 through 7 for: 1) aggregation of RI data for the purpose of comparing background concentrations to select contaminants of concern (COCs) for the Human Health Risk Assessment (HHRA), and 2) aggregation of data for the purpose of conducting an exposure assessment. Work has stopped until an agreement is reached among the parties to the IAG for guidance on the methodology to proceed on these two issues. The stop work order prevents completion of the HHRA and subsequent Resource Conservation and Recovery Act (RCRA) Facilities Investigation (RFI)/RI Report. Other portions of the Risk Assessment, including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological effects

assessment are proceeding as scheduled. Ground water and air monitoring are planned to continue for one year. The effect of the stop work order will become a major factor if agreement is not reached by April 1994.

Other portions of the Risk Assessment including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological effects assessment are proceeding as scheduled.

FUTURE PLANS

Continue working on the HHRA Technical Memoranda (TM) which will be incorporated into the RFI/RI Report and Feasibility Study (FS) for OU 5 and will be followed by the Record of Decision (ROD). It is

anticipated that the final remedial action (RA) may provide for sediments to be excavated, treated, and disposed at offsite facilities. Soils contaminated with organics and metals may be excavated and potentially relocated to new RCRA-compliant storage cells on the plant site or may be stabilized in place. Soils potentially contaminated with radionuclides may be excavated, treated, and relocated to new soil solidification facilities for crating and then shipped to a final disposal site. Onsite rotary kiln technology might be used to remove organics from soils. Organics in water will be removed by granular activated carbon (GAC) units or ultraviolet (UV)/peroxide treatment. The extent of the RA will be determined by results of the RI and FS. Table III lists the OU 5 IAG milestones planned for FY94 and the first half of FY95.

TABLE I: OU 5 INDIVIDUAL HAZARDOUS SUBSTANCE SITES

<u>IHSS</u>	<u>Site Name</u>	<u>IHSS</u>	<u>Site Name</u>
115	Original Landfill	133.6	Concrete Wash Pad
133.1	Ash Pit 1-1	142.10	Retention Pond: C-1
✓ 133.2	Ash Pit 1-2	142.11	Retention Pond: C-2
133.3	Ash Pit 1-3	209	Surface Disturbance SE of Bldg 881
133.4	Ash Pit 1-4	196	Water Treatment Plant Backwash
133.5	Incinerator		Pond

TABLE II: OU 5 IAG MILESTONES COMPLETED THROUGH FY93

<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Extension Date</u>	<u>Date Accomplished</u>
Submit Draft Phase I RFI/RI Work Plan	April 5, 1991	N/A	April 5, 1991
Submit Final Phase I RFI/RI Work Plan	August 30, 1991	N/A	August 30, 1991

TABLE III: OU 5 IAG MILESTONES PLANNED FOR FY94 AND THE FIRST HALF OF FY95

<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Extension Date Requested (1)</u>
Submit Draft Phase I RFI/RI Report	November 30, 1993	December 20, 1994
Submit Final Phase I RFI/RI Report	May 3, 1994	May 30, 1995

(1) A request for milestone extension for the two remaining milestones was submitted to the EPA and CDF on October 7, 1993. The regulatory agencies' response was to defer a response until after the work stoppage related to the HHRA stop work order for OU 5 has been lifted. At that time, milestones can be finalized considering both adjustments for good cause and work stoppage.



ROCKY FLATS ENVIRONMENTAL RESTORATION

FEBRUARY 1994

OU 6 - WALNUT CREEK

Operable Unit (OU) 6, Walnut Creek, is an element of United States Department of Energy (DOE) Environmental Restoration Program at the Rocky Flats Plant (RFP) in Golden, Colorado.

DESCRIPTION

Operable Unit 6 encompasses assessment and remediation of 19 Individual Hazardous Substance Sites (IHSSs) in the Walnut Creek drainage, which drains the surface water from the north half of Rocky Flats, including the runoff from a large portion of the Industrial Area. The OU 6 IHSSs are shown in Table I. OU 6 activities also include eleven groundwater monitoring wells which have been installed throughout OU 6 to monitor the alluvial aquifer.

MAJOR CONTAMINANTS

The suspected contaminants in the soils, sediments, and water for OU 6 include plutonium, uranium, inorganics, metals, nitrates, strontium, tritium, pesticides/PCB, volatile organic compounds (VOCs), graphite, and acids.

DESCRIPTION OF WORK COMPLETED

OU ASSESSMENT

DOE accepted a ten month extension agreed upon by the regulatory agencies for the draft and

final Phase I Remedial Investigation (RI) Reports. The field work portion of the Phase I RI is complete with the exception of quarterly groundwater and surface water sampling.

In June 1993, the regulatory agencies directed DOE to stop work on OUs 1 through 7 for: 1) aggregation of RI data for the purpose of comparing background concentrations to select contaminants of concern (COCs) for the Human Health Risk Assessment (HHRA), and 2) aggregation of data for the purpose of conducting an exposure assessment. Work has stopped until an agreement is reached among the parties to the IAG for guidance on the methodology to proceed on these two issues. The stop work order has prevented continued work to be accomplished on Technical Memorandum (TM) #2, *Exposure Scenarios*, and TM #4, *Contaminants of Concern*. This in turn has delayed the completion of the HHRA and Resource Conservation Recovery Act (RCRA) Facility Investigation (RFI)/RI Report. Draft versions of TMs #2, and #3, *Modeling*, were submitted to the regulatory agencies and comments are pending. Until the regulatory agencies respond to the Technical Memoranda and the stop work order is resolved, the extended IAG milestones may have to be renegotiated. Work continues on other portions of the Risk Assessment, including data evaluation, identification of exposure parameters, and ecological effects assessment. Table II lists the Interagency Agreement (IAG) milestones completed through FY93.

FUTURE PLANS

The RI field activities, which will lead to the RI Report and Feasibility Study (FS) activities for OU 6, will continue and will be followed by the Record of Decision (ROD). It is anticipated that the final Remedial

Action (RA) will provide for cleaning, removing, or stabilizing contamination in the soil to prevent further spread to the environment. The extent of the RA will be determined by results of the RI and FS. Table III lists the OU 6 IAG milestones planned for FY94 and the first half of FY95.

TABLE I: OU 6 INDIVIDUAL HAZARDOUS SUBSTANCE SITES

<u>IHSS</u>	<u>Site Name</u>	<u>IHSS</u>	<u>Site Name</u>
141	Sludge Dispersal	143	Old Outfall
142.1	Retention Ponds: A-1 Pond	156.2	Soil Dump Area
142.2	Retention Ponds: A-2 Pond	165	Triangle Area
142.3	Retention Ponds: A-3 Pond	166.1	Trench A
142.4	Retention Ponds: A-4 Pond	166.2	Trench B
142.5	Retention Ponds: B-1 Pond	166.3	Trench C
142.6	Retention Ponds: B-2 Pond	167.1	North Area - Spray Field
142.7	Retention Ponds: B-3 Pond	216.1	East Area - Spray Field
142.8	Retention Ponds: B-4 Pond		
142.9	Retention Ponds: B-5 Pond		
142.12	Newly Identified A-5 Pond		

* IHSS 167.2 and 167.3 have been administratively placed in OU 7.

TABLE II: OU 6 IAG MILESTONES COMPLETED THROUGH FY93

<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Extension Date</u>	<u>Date Accomplished</u>
Submit Draft Phase I RFI/RI Work Plan	April 19, 1991		April 19, 1991
Submit Final Phase I RFI/RI Work Plan	September 16, 1991		September 16, 1991

TABLE III: OU 6 IAG MILESTONES PLANNED FOR FY94 AND THE FIRST HALF OF FY95

<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Extension Date</u>
Submit Draft Phase I RFI/RI Report	August 4, 1993	June 10, 1994 (1)
Submit Final Phase I RFI/RI Report	January 7, 1994	November 18, 1994 (1)

(1) The extension date for the draft and final Phase I RFI/RI Reports will be renegotiated to incorporate the time lost from the Human Health Risk Assessment stop work order.



ROCKY FLATS

ENVIRONMENTAL RESTORATION

FEBRUARY 1994

OU 7 - PRESENT LANDFILL

Operable Unit (OU) 7, Present Landfill, is an element of United States Department of Energy (DOE) Environmental Restoration Program at the Rocky Flats Plant (RFP) in Golden, Colorado.

DESCRIPTION

The Present Landfill, OU 7, is located north of the plant complex on the western edge of an unnamed tributary of North Walnut Creek and is comprised of two Individual Hazardous Substance Sites (IHSSs). IHSS 114, Present Landfill, includes landfill waste and leachate at the Present Landfill, soils beneath the landfill potentially contaminated with leachate, and sediments and water in the East Landfill Pond. IHSS 203, Inactive Waste Storage Area, contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area. A section of the Present Landfill located in the southwest corner was used between 1986 and 1987 as a temporary storage area for hazardous waste. The Present Landfill began operation in August 1968 and was originally constructed to provide for disposal of RFP's nonradioactive and nonhazardous wastes. In September 1973, tritium was detected in leachate from the landfill. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill, and consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit

undergoing Resource Conservation and Recovery Act (RCRA) closure.

MAJOR CONTAMINANTS

Major contaminants identified in OU 7 from historical records and preliminary assessments include tritium, volatile organic compounds (VOCs), and metals leachate at various concentrations.

DESCRIPTION OF WORK COMPLETED/IN PROGRESS

OU ASSESSMENT

The required preparations and reviews were successfully completed for submittal of the draft Phase I Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Work Plan in 1990. The Environmental Protection Agency (EPA) and the Colorado Department of Health (CDH) review of the Work Plan was completed in 1991. The Final Phase I RFI Work Plan was approved in 1991. Implementation of the Work Plan began in October 1993. Site characterization activities and subsequent development of a Phase I RFI/Remedial Investigation (RI) Report will follow. RFI fieldwork and laboratory work for the Phase I investigation is complete and data validation is currently underway.

In June 1993, the regulatory agencies directed DOE to stop work on OUs 1 through 7 for:

1) aggregation of RI data for the purpose of comparing background concentrations to select contaminants of concern (COCs) for the Human Health Risk Assessment (HHRA), and 2) aggregation of data for the purpose of conducting an exposure assessment. The stop work order has prevented work to be accomplished on Technical Memorandum (TM) #4, *Contaminants Of Concern*. Work has stopped until an agreement is reached among the parties to the IAG for guidance on the methodology to proceed on these two issues. This in turn prevents the completion of the HHRA and subsequent Resource Conservation and Recovery Act (RCRA) Facilities Investigation (RFI)/RI Report. Other portions of the Risk Assessment, including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological effects assessment are proceeding as scheduled. Ground water and air monitoring are planned to continue for one year. OU 7 continues partial data analysis and nature and extent analysis.

Work is currently being done to try and streamline OU 7 and accelerate the IAG schedule. The current strategy is to 1) use Colorado Hazardous Waste Act (CHWA) closure requirements and EPA presumptive remedy guidance to close the landfill which allows for immediate Interim Measure Interim Remedial Action (IM/IRA) commencement, 2) develop a risk-based criteria for the pond and surrounding soils since no Applicable or Relevant and Appropriate Requirements (ARAR) exist for soils, and 3) investigate and disposition groundwater based upon ARAR. The regulatory agencies agree with the proposed rescoping and are currently

participating in negotiation to finalize revised data quality objectives.

FUTURE PLANS

The RFI field activities will lead to the RFI Report and include an assessment of risk from OU 7 Corrective Measures Study (CMS). Activities to support mitigation of risk from OU 7 will be implemented and will be followed by the Corrective Action Decision (CAD). It is anticipated that the final remedial actions (RA) may include treatment of groundwater contaminated with radionuclides and metals using an ion exchange process or a precipitation/flocculation/filtration process. Water contaminated with organics may be treated with granular activated carbon (GAC) units or ultraviolet (UV)/peroxide process. Soils which pose a threat to human health and the environment based on contamination levels of radionuclides, metals, and organics will be excavated and transported to the landfill for disposal. The landfill will act as a Corrective Action Measurement Unit (CAMU) for onsite disposal of soils and sediments contaminated by leachate migration. After the contaminated soils and sediments are transported to the landfill, a RCRA cover consisting of clay will be placed over the landfill. Significant treatment and storage costs can be reduced from the implementation of a CAMU as compared to an extensive treatment and storage process. It has been proposed that IHSSs 166 and 167 be included within the OU 7 IM/IRA based on risk assessed under the OU 6 effort. The extent of the RA will be determined by results of the RI and FS. Table III lists the OU 7 Interagency Agreement (IAG) milestones planned for FY94 and the first half of FY95.

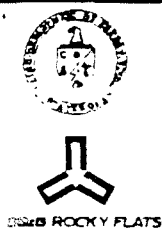
TABLE I: OU 7 IAG MILESTONES COMPLETED THROUGH FY93

<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Extension Date</u>	<u>Date Accomplished</u>
Submit Draft Phase I RFI/RI Work Plan	June 8, 1990		June 8, 1990
Submit Final Phase I RFI/RI Work Plan	August 28, 1991		August 28, 1991

TABLE II: OU 7 IAG MILESTONES PLANNED FOR FY94 AND THE FIRST HALF OF FY95

<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Extension Date</u>
Submit Draft Phase I RFI/RI Report*	October 12, 1993	
Submit Final Phase I RFI/RI Report*	March 16, 1994	
Submit Draft Phase II RFI/RI Work Plan*	September 13, 1994	
Submit Draft Phase I Proposed IM/IRA Decision Document	November 1, 1994	February 14, 1997
Submit Final Phase II RFI/RI Work Plan*	February 15, 1995	April 15, 1996
Submit Final Phase I Proposed IM/IRA Decision Document	April 6, 1995	October 16, 1997

- * Potential deletion as a result of rescopeing negotiation



ROCKY FLATS
ENVIRONMENTAL RESTORATION

FEBRUARY 1994

INDUSTRIAL AREA OPERABLE UNITS

DESCRIPTION

The Rocky Flats Environmental Restoration (ER) Programs are part of the United States Department of Energy (DOE) national ER Program which was established to identify and clean up inactive waste sites at DOE facilities in compliance with applicable federal and state environmental laws and regulations and compliance agreements. DOE, Environmental Protection Agency (EPA) and the Colorado Department of Health (CDH) signed an Interagency Agreement (IAG) that establishes the regulatory and technical requirements for the Rocky Flats Plant (RFP) ER Program. The IAG organized 177 Individual Hazardous Substance Sites (IHSSs) at RFP into 16 operable units (OUs). The description, work completed to-date, and future plans of six of these OUs, which are located in RFP's Industrial Area (IA) where the environmental and logistical conditions are similar, are presented in this fact sheet.

The six OUs included in the IA are:

- **OU 8 - 700 Area** consists of 24 IHSSs primarily inside and around production areas at RFP. Potential contamination exists from a wide variety of sources from above-ground and underground tanks, equipment washing areas, and releases from inside buildings that may have migrated outside the building. Contaminants from these sources include nonradioactive inorganic and organic compounds (e.g., acids, bases, solvents, and petroleum products). Also, potential contamination exists from low-level radioactive mixed wastes.
- **OU 9 - Original Process Waste Lines (OPWL)** consists of a series of tanks and associated pipelines that once carried the majority of the RFP's process wastes to holding areas for treatment during production. The OPWL system consists of 57 designated pipe sections extending between 73 tanks and 24 buildings connected by 35,000 feet of buried pipeline. The system was replaced over the 1975 to 1983 period. The OPWL system was known to carry or have stored various liquid process wastes containing low-level radioactive materials, nitrates, caustics, and acids.
- **OU 10 - Other Outside Closures** consists of 15 IHSSs throughout the IA at RFP. The main type of wastes identified at these IHSSs range from storage yards for pondcrete/saltcrete from the OU 4 Solar Ponds, drum storage yard, and a property utilization and disposal yard for salvage equipment. Various contaminants such as low-level radioactive mixed wastes, inorganic, and organic compounds may have impacted the environment.
- **OU 12 - 400/800 Area** consists of 10 IHSSs. These areas are loading dock areas, cooling towers, fiberglassing areas, and leaks from process waste areas. The types of contamination include solvents spills, low-level radioactive process wastes, acid spills.

- OU 13 - 100 Area consists of 14 IHSSs including former chemical storage sites, radioactive waste storage, and scrap metal sites. Various contamination exists from several areas where wastes were destroyed such as oil burning pits, lithium metal destruction areas, and solvent burning sites. Other constituents include low-level radioactive waste spills, chemicals, and petroleum spills.
- OU 14 - Radioactive Sites consists of eight IHSSs where radioactive spills have occurred. The contamination at these areas are low-level radioactive wastes and possible low-level mixed wastes.

WORK COMPLETED TO DATE

Consolidation of IA Operable Units continues due to the fact that the scope of work and logistical approach for the OUs are very similar. This integration will provide a more efficient use of resources. The focus of the individual OU investigations is similar with respect to implementation of initial field activities. An integrated Field Sampling Plan (FSP) for the IA OUs which includes radiation surveys, surface soil sampling, soil gas analysis, data compilation, etc., is being prepared. Additionally, many of the IHSSs associated with each OU are located adjacent to one another and in many cases overlap with the IHSSs from other OUs within the IA. This consolidation of fieldwork for the IA OUs will reduce costs by the identification and elimination of redundancy of sampling efforts between the IA OUs. Additionally, logistics and administrative support between IA OUs will be reduced because one subcontractor will be utilized for field work implementation. Schedules have been developed that combine the FSPs from each OU thereby providing a common oversight of the tasks, effort, and

resource allocations for initial field work. The integration of the IA OUs currently incorporates only the initial field work or nonintrusive work efforts. The current plan is to implement the nonintrusive work described in each OU FSP contained in the Phase I Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI)/Remedial Investigation (RI) Work Plans. Some intrusive work (e.g., drilling, groundwater monitoring well installation, soil borings, sampling, etc.) will be deferred until decontamination and decommissioning (D&D) efforts are completed, because the D&D activities may recontaminate the IHSSs. Since most of the IHSSs associated with the IA OUs are located near buildings or plant facilities that are scheduled for D&D, there is a strong possibility that the IHSSs could be affected by the future D&D work. Therefore, the current planning is to defer the intrusive field work until it can be coordinated with D&D efforts in order to avoid potential reinvestigation of IHSSs after D&D. By deferring intrusive field work the possibility that an IHSS will become recontaminated from the D&D activities is greatly lessened. However, implementation of the nonintrusive field work will provide baseline information that can be used for both the ER and D&D planning efforts. Other IHSSs are being identified for limited intrusive field work to determine potential for early remedial action, or a no further action disposition.

Integration of IA OUs has identified cost savings and schedule reductions based on:

- Resource consolidation
- Contracting consolidation
- Permitting requirements
- Mobilization/demobilization
- Training
- Project management
- Sample integration/analyte grouping
- Identification of IHSS overlap

Common tasks identified from each OU FSP that can initially be completed as an integrated program are:

- Radiation surveys
- Data compilation
- Technical memoranda
- Surface soil sampling
- Lab turnaround
- Soil gas surveys
- Geophysical surveys
- Inspections

The final approach for implementation of the integrated program utilizes the above tasks, as a minimum, for each OU. Some additional tasks have been identified for each that are unique to that OU and were accounted for in the overall implementation schedule.

Draft and final RFI/RI work plans for the six IA OUs have been completed and submitted to the regulatory agencies. All the IA OU RFI/RI Work Plans have been approved by the agencies except for OU 8. The IA OU EE field work began in October 1993 and is continuing.

FUTURE PLANS

The integration of the IA OUs is planned to be formally presented in March, 1994, to the regulatory agencies. The intent of the integration is to consolidate investigative efforts, initial fieldwork, and nonintrusive efforts, and to develop a combined action and approach. Additionally, future intrusive fieldwork planned for the IA OUs will need to be coordinated with transition, D&D, and other plant activities because of the change in plant mission from production to environmental restoration. Presently, the field effort for IA OUs will continue with additional planning stages to support funding requests for future years.

Future plans include the continuation of nonintrusive sampling activities, the continuation of work on the integrated field sampling plan, and the preparation necessary to begin limited intrusive activities and determine the final linkages of IHSSs to D&D.



ROCKY FLATS ENVIRONMENTAL RESTORATION

FEBRUARY 1994

OU 11 - WEST SPRAY FIELD

Operable Unit (OU) 11, West Spray Field, is an element of United States Department of Energy (DOE) Environmental Restoration Program at the Rocky Flats Plant (RFP) in Golden, Colorado.

DESCRIPTION

Operable Unit 11, which consists of one Individual Hazardous Substance Site (IHSS), No. 168, the West Spray Field, is located within the RFP buffer zone immediately west of the plant security area. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from solar evaporation ponds 207B North and Center (contaminated groundwater in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105.1 acres, 38.3 of which received direct application of potentially hazardous waste. The Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) process will entail field studies to investigate the presence or absence of hazardous constituents in soil and groundwater, and include an assessment of risk from any contaminants identified.

MAJOR CONTAMINANTS

Potential contaminants identified consist of metals, nitrates, inorganics, and radionuclides (U, Pu, Am, and tritium).

DESCRIPTION OF WORK COMPLETED

OU ASSESSMENT

Both the draft and final Phase I RFI/Remedial Investigation (RI) Work Plans have been submitted to the regulatory agencies. Technical Memorandum (TM) #1, *Revised Field Sampling Plan (FSP) and Data Quality Objectives*, is undergoing revision to present a more clear and concise rationale for proposed reductions in scoping. The format for the Data Quality Objectives for TM #1 reflects the new regulatory guidance. Preliminary Remediation Goals were also recalculated for the determination of constituents for analysis section of the revised FSP. Interagency Agreement (IAG) signatories are currently participating in negotiations designed to streamline the final action process. This includes integrating Phases I and II field activities and integrating Interim Measures/Interim Remedial Action (IM/IRA) with field corrective actions. This is anticipated to result in an accelerated schedule including the deletion of several IAG milestones as well as significant cost-savings.

Work continues on a revised Environmental Evaluation (EE), which will be implemented in accordance with EPA framework guidance. Preparations to begin field work are under way.

FUTURE PLANS

LAG signatories are currently participating in negotiations designed to streamline the final action process. This includes integrating Phases I and II field activities and integrating the IM/IRA with field Corrective Actions. This is anticipated to result in an accelerated schedule including deletion of several IAG milestones as well as significant cost savings. The RFI field activities will lead to the RFI Report, which will assess risk from OU 11. Future plans include: 1) Revised FSP to determine nature and extent of contamination, 2) Risk Assessment based on data from FSP, and 3) Decisions of whether to treat waste or justify no further action. Existing conditions and data indicate a justification of no further action for a CAD/ROD. Corrective

Measures Study (CMS) activities for OU 11 will be implemented to mitigate unacceptable risk and will be followed by the Corrective Action Decision (CAD). It is anticipated that the final Remedial Action (RA), if necessary, will treat ground water contaminated with radionuclides and metals using an ion exchange process or a precipitation/flocculation/filtration process. Soils contaminated with radionuclides may be excavated and transported to a soil treatment facility prior to shipment to a low-level disposal site. Soils contaminated with organics and metals may be excavated and relocated to new RCRA-compliant storage cells on plantsite. The extent of the RA will be determined by results of the RFI and CMS. Table I lists the OU 11 IAG milestones completed through FY93. Table II lists the OU 11 IAG milestone planned for FY94 and the first half of FY95.

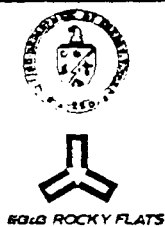
TABLE I: OU 11 IAG MILESTONES COMPLETED THROUGH FY93

<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Extension Date</u>	<u>Date Accomplished</u>
Submit Draft Phase I RFI/RI Work Plan	June 8, 1990		June 8, 1990
Submit Final Phase I RFI/RI Work Plan	January 2, 1992		January 2, 1992

TABLE II: OU 11 IAG MILESTONES PLANNED FOR FY94 AND THE FIRST HALF OF FY95

<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Extension Date</u>
Submit Draft Phase I RFI/RI Report	September 20, 1994	
Submit Final Phase I RFI/RI Report*	February 22, 1995	

* Potential revision as a result of scoping renegotiations



OU 15 - INSIDE BUILDING CLOSURES

Operable Unit (OU) 15, Inside Building Closures, is an element of the United States Department of Energy (DOE) Environmental Restoration Program at the Rocky Flats Plant (RFP) in Golden, Colorado.

DESCRIPTION

Operable Unit 15 is comprised of six Individual Hazardous Substance Sites (IHSSs), as shown in Table I. Drums containing solids and liquids were stored at the OU 15 IHSSs. The six IHSSs currently have interim status under the Resource Conservation and Recovery Act (RCRA). The major activity proposed is characterization of contamination associated with the OU 15 IHSSs both inside and outside buildings and, if applicable, decontamination of the indoor facilities and remediation of contamination outside buildings.

The OU 15 scope has been significantly reduced. Closure plans for the IHSSs were submitted to the Colorado Department of Health (CDH) during 1988 and 1989. However, closure plans are no longer necessary for the OU 15 IHSSs. Therefore, implementation of the closure plans will not be necessary. The six IHSSs will undergo closure via the Interim Measures (IM) process described within the RFP Interagency Agreement (IAG).

POTENTIAL CONTAMINANTS

Identified potential contaminants include chlorinated solvents, beryllium, and uranium, as indicated by historical reports. A major purpose of the Phase I Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI)/Remedial Investigation (RI) is to determine if contamination is present since documentation of a release is available for one OU 15 IHSS only.

DESCRIPTION OF WORK COMPLETED

OU ASSESSMENT

Both the draft and final Phase I RFI/RI Work Plans have been submitted and approved by the Environmental Protection Agency (EPA) and CDH. During April 1992, IHSS 215, Unit 55.13 - Tank T-40 - was deleted from OU 15 and added to OU 9 as part of an IHSS realignment of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA. Similarly, IHSS 212, RCRA Unit 63, was removed from the IAG schedule for OU 15 because it is currently active as a Drum Storage Area, and has been included in the Rocky Flats Plant RCRA Part B Transuranic (TRU) Mixed Waste permit application.

FUTURE PLANS

The Stage I and II of the Phase I RFI/RI field sampling work for OU 15 have been completed. The draft Phase I RFI/RI Technical Memorandum (TM) #1, *Field Sampling Plan*, has been prepared and is currently undergoing review and comment prior to being

incorporated into the draft Phase I RFI/RI Report. Based upon results presented in TM #1, it appears that OU 15 can be closed utilizing the Phase I RFI/RI Report as a basis for no action justification provided that the EPA and CDH concur with this approach. This is an accelerated effort that could result in completion of the draft Phase I RFI/RI Report during April 1994.

TABLE I: OU 15 INDIVIDUAL HAZARDOUS SUBSTANCE SITES

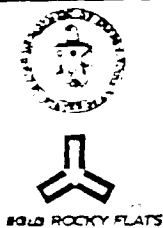
<u>IHSS</u>	<u>Site Name</u>
178	Building 881 Drum Storage Area
179	Building 865 Drum Storage Area
180	Building 883 Drum Storage Area
204	Unit 45, Original Uranium Chip
211	Unit 26, Building 881 Drum Storage
217	Unit 32, Building 881 Cyanide Bench Scale Treatment

TABLE II: OU 15 IAG MILESTONES COMPLETED THROUGH FY93

<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Extension Date</u>	<u>Date Accomplished</u>
Submit Draft Phase I RFI/RI Work Plan	June 1, 1992		June 4, 1992
Submit Final Phase I RFI/RI Work Plan	October 26, 1992		October 26, 1992

TABLE III: OU 15 IAG MILESTONES PLANNED FOR FY94 AND THE FIRST HALF OF FY95

<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Extension Date</u>
Submit Draft Phase I RFI/RI Report	August 1, 1994	
Submit Final Phase I RFI/RI Report	January 4, 1995	



ROCKY FLATS ENVIRONMENTAL RESTORATION

FEBRUARY 1994

OU 16 - LOW PRIORITY SITES

Operable Unit (OU) 16, Low Priority Sites, is an element of United States Department of Energy (DOE) Environmental Restoration Program at the Rocky Flats Plant (RFP) in Golden, Colorado.

DESCRIPTION

Operable Unit 16, Low Priority Sites, consists of seven Individual Hazardous Substance Sites (IHSSs) as shown in Table I. Six of the sites are inside the RFP protected area (PA), and one is in the RFP buffer zone north of the PA, as shown in the operable unit map. The seven IHSSs are grouped together in the LAG because of the likelihood that previous response actions or natural environmental processes at these low-priority sites has eliminated the need for further action. In accordance with the Environmental Protection Agency (EPA) guidance (1988a), a "No Further Action" decision is appropriate at sites where a previous removal action or natural environmental processes mitigate risks to human health and the environment. The risks associated with each of the IHSSs in OU 16 and the need for further action are assessed in the document using a conceptual model to evaluate the exposure pathways by which human and biotic receptors may be exposed to contaminants.

POTENTIAL CONTAMINANTS

Potential contaminants in OU 16 IHSSs potentially include solvents, antifreeze, steam condensate, nickel carbonyl,

backwash pond material from water treatment, and scrap metal.

DESCRIPTION OF WORK COMPLETED

OU ASSESSMENT

Potential risks to human health and the environment associated with historical releases and spills at IHSSs 185, 192, 193, 194, and 195 have been mitigated by past response actions and/or natural attenuation processes that eliminate the source or exposure pathways. Therefore, further action is not justified for these five IHSSs. Further action for IHSSs 196 and 197 will be accomplished through investigation of proximate IHSSs in other OUs. IHSS 196 will be investigated as part of IHSS 115 (OU 5), and IHSS 197 will be investigated as part of IHSS 117.1 (OU 13). A draft "No Further Action Justification" (NFAJ) document was submitted to EPA and the Colorado Department of Health (CDH) in March 1992. The document was revised upon receipt of comments from EPA and CDH, and the final was submitted in July 1992. The revised final document was submitted to EPA/CDH in October 1992. The NFAJ document was approved by the regulatory agencies and DOE in March 1993. To fulfill the requirements of the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and to complete the administrative process at OU 16, a Proposed Plan (PP), Record of Decision (ROD), and a RCRA permit

modification will be completed. The PP and draft modification of Colorado Hazardous Waste Permit for OU 16 was finalized and has been approved for public comment by the regulatory agencies and DOE. A public comment period for the PP has been completed. A public hearing/meeting was held December 8, 1993 concurring the Proposed Plan/Draft Permit Modification. A responsiveness summary address on public comments and questions is being prepared.

FUTURE PLANS

The record of decision process will continue in FY94. With the preparation/acceptance/approval of the Public Comment Responsiveness Summary by DOE, EPA, and CDH, a "No Action" ROD will be prepared for closure of OU 16 with regard to CERCLA. CDH will then modify the RCRA permit, which will constitute corrective action for closure of OU 16 with respect to RCRA.

TABLE I: OU 16 INDIVIDUAL HAZARDOUS SUBSTANCE SITES

<u>IHSS</u>	<u>Site Name</u>
185	Solvent Spill
192	Antifreeze Discharge
193	Steam Condensate Leak (400 Area)
194	Steam Condensate Leak (700 Area)
195	Nickel Carbonyl Disposal
196	Water Treatment Plant Backwash Pond
197	Scrap Metal Sites

TABLE II: OU 16 IAG MILESTONES COMPLETED THROUGH FY93

<u>IAG Milestone Description</u>	<u>Original Table 6 Date</u>	<u>Extension Date</u>	<u>Date Accomplished</u>
Submit Draft No Further Action Justification Document	March 4, 1992		March 4, 1992
Submit Final No Further Action Justification Document	July 30, 1992		July 30, 1992
Submit Revised Final NFAJ Document			October 16, 1992



ROCKY FLATS ENVIRONMENTAL RESTORATION

FEBRUARY 1994

SURFACE WATER MANAGEMENT

Surface water management at the United States Department of Energy (DOE) Rocky Flats Plant (RFP), located in Golden, Colorado, is managed by the DOE Rocky Flats Office (RFO) Environmental Protection Division. The offsite water protection initiative and some onsite water management improvements are being funded under the Environmental Restoration Program.

DESCRIPTION

The quality of surface water at Rocky Flats has caused concern to local communities, DOE, EG&G, federal and state regulators, and the public because two major water supplies, Great Western Reservoir and Standley Lake, are located directly downstream of Rocky Flats. This concern has resulted in a complex network of regulations, agreements, and procedures for water quality treatment and management at Rocky Flats.

A working group was formed in the summer of 1989 at the request of Congressman David Skaggs (2nd U.S. Congressional District) to address water management options at the plant. The working group selected an alternative, referred to as "Option B Plus J" or "Option B with Selected Onsite Improvements", for long-term management and disposal of surface water. This management alternative includes offsite water management projects (Option B) associated with

the Great Western Reservoir Replacement Project and the Standley Lake Diversion Project which will further reduce the potential for waterborne contaminants from the Rocky Flats Plant (RFP) to affect local drinking water supplies. Also included are Onsite Water Management projects (Option J) aimed at improving pond dam safety and operations, upgrading effluent treatment capabilities, improving site drainages and flood control, and minimizing downstream discharges of plant site waters.

DOE and EG&G developed a draft surface water management plan in order to integrate water quality management activities and to address regulatory requirements and public concerns in an effective manner.

Currently, the ponds are managed under the Clean Water Act, with the potential that they will eventually be managed under CERCLA. Changing to management under CERCLA is not expected to have significant scope impact on Option J projects.

MAJOR CONTAMINANTS

Plutonium and other radionuclides have been identified in the RFP onsite pond sediments and in the offsite reservoir sediments downstream of RFP. Various other unspecified contaminants may be present in the plant surface water, Great Western Reservoir, and Standley Lake.

DESCRIPTION OF WORK COMPLETED

OPTION B

DOE has publicly committed to fund the Option B offsite projects in order to further reduce potential risks to the water supplies of the cities of Broomfield and Westminster, Colorado. A \$20 million grant was paid by DOE, funded jointly by Defense Programs (DP) and Environmental Management (EM), to Broomfield and Westminster in FY91 and FY92 to begin planning, environmental assessments, engineering/design work, and water rights purchases. An additional \$40 million was granted by EM to the cities in FY93. Milestones accomplished through FY93 for the Great Western Reservoir (GWR) Replacement Project include analysis of portions of the GWR shoreline samples for plutonium and interpretation of results; final permits, final design, and site acquisition efforts begun for the pipeline from Carter Lake to Broomfield; and hydraulic modeling studies for modifying Carter Lake outlet works completed by the U. S. Bureau of Reclamation. Final design for the Carter Lake outlet works was completed. A site was selected for the new water treatment plant and the preliminary design begun. Broomfield released a request for proposals for its water rights sale and new water rights purchases.

The Standley Lake Protection Project accomplishments include the removal of the diversion canal from the project due to local neighborhood opposition and constraints resulting from a nearby bald eagle nest. The draft biological assessment for the project has been submitted to the U.S. Fish and Wildlife Service. Once a biological opinion is given, the section 404 permit will be submitted to the U.S. Army Corps of Engineers. The Human Health Risk Assessment (HHRA) was completed for the construction of the project. Discussions with Jefferson County on the purchase of open space land for the reservoir

are ongoing. Cities are continuing to pursue the construction of the reservoir offsite as the most expedient choice at this time

OPTION J

Planning and conceptual design for onsite projects was initiated in FY91 and FY92. EM funding for Onsite Water Management projects began in FY93. Accomplishments through the second quarter of FY94 include completion of Title II Design for water monitoring stations downstream of Operable Units; scope refinement for a Pond C-2 Discharge Minimization project which includes recycling of Pond C-2 water to the plant raw water system for cooling tower usage; final scope development for upgrades to the South Interceptor Ditch which is a key runoff control structure along Woman Creek; the start of a Drainage Repairs and Improvements Plan to address drainage project interactions and develop a cost-effective, practical approach to protect RFP from flooding and minimize the potential for significant contaminant transport; initiation of several minor drainage improvement projects; and completion of a subcontract statement of work defining geotechnical evaluation and instrumentation additions necessary as the next step toward defining safety upgrades for the three dams controlling surface water releases from plantsite. Another accomplishment included preparation of a draft Pond Water Management Interim Measure/Interim Remedial Action (IM/IRA) Decision Document during FY93. This IM/IRA was transferred from under On-site Water Management to the OU 6 ADS.

FUTURE PLANS

OPTION B

- Great Western Reservoir Project

Construction will be completed on the raw water transmission pipeline from Carter Lake to

Broomfield. Construction for the modification of the Carter Lake outlet works will be completed and final design and construction of the new water treatment plant will be completed.

- Standley Lake Diversion Project

A 404 permit will be submitted to the Corps of Engineers. Final design and final land acquisition for the Woman Creek Reservoir will be completed, and construction will be accomplished. Piping for the Kinnear Ditch project will be installed.

OPTION J

- The Pond C-2 Discharge Minimization project for plant water discharge minimization will be completed.
- Installation of environmental monitoring stations downstream of Operable Units will be completed.

- Design for dam structural improvements for the A, B, and C series ponds will be completed, and construction will be performed.

- General site drainage and flood control improvements, including a major rebuild of the South Interceptor Ditch, will be completed.

- Permanent electrical power will be supplied to several Buffer Zone locations.

- The installation of spray evaporation systems will be evaluated and constructed if determined to be a feasible discharge minimization approach.

- Investigations and pilot testing of advanced low-level treatment technology will be performed. Installation and operation of permanent low-level treatment facilities will occur.

- Real-time monitoring systems and analytical capabilities will be improved.

TABLE I: WATER PROJECTS

Offsite Projects (Option B)

- A) Standley Lake Interceptor Canal
- B) New Woman Creek Reservoir
- C) New drinking water source and water treatment plant for the city of Broomfield

Onsite Projects (Option J)

- A) Dam upgrades/inlet-outlet works replacement/pond sediment control
 - B) A-4 pond treatment system
 - C) Permanent C-2 pond recycle
 - D) Site drainage improvements
 - E) Permanent power to ponds/buffer zone
 - F) Spray evaporation system at ponds
 - G) Environmental Monitoring System
 - H) Analytical Upgrader
-

IHSS'S BY OU

OU	IHSS
1	102, 103, 104, 105.1, 105.2, 106, 107, 119.1, 119.2, 130, 145
2	108, 109, 110, 111.1, 111.2, 111.3, 111.4, 111.5, 111.6, 111.7, 111.8, 112, 113, 140, 153, 154, 155, 183, 216.2, 216.3
3	199, 200, 201, 202
4	101
5	115, 133.1, 133.2, 133.3, 133.4, 133.5, 133.6, 142.10, 142.11, 196, 209
6	141, 142.1, 142.2, 142.3, 142.4, 142.5, 142.6, 142.7, 142.8, 142.9, 142.12, 143, 156.2, 165, 166.1, 166.2, 166.3, 167.1, 216.1
7	114, 167.2, 167.3, 203
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MEMORANDUM

TO: Nick Demos, EG&G Rocky Flats Plant

FROM: Frank Blaha, Wright Water Engineers

SUBJECT: Fate of IHSS 136.3

DATE: September 19, 1994

Also, PER
SUZANNE Smith
on 9/19/94, IHSS
136.3 and IHSS
136.1 ARE THE
SAME LOCATION.
M. Day

The fate of IHSS 136.3 is the issue of this memorandum.

The January, 1991 Interagency Agreement (IAG) identifies an IHSS numbered 136.3, and assigns this IHSS to Operable Unit (OU) 12. Despite multiple checking activities and reviews, IHSS 136.3 is not explicitly and clearly addressed in the Historical Release Report (HRR) of 1992. This was an oversight in the preparation of the HRR. All of the 136 IHSSs were identified in the IAG and in earlier documentation as Cooling Tower ponds associated with Building 444. The IAG documentation placed all of the ponds to the west of Building 444.

A specific narrative description of the findings in the HRR was included with respect to IHSSs 136.1 and 136.2. In this narrative description it is stated that no documentation was ever found of a third cooling water pond associated with Building 444 (first full sentence of IHSS 400-136.1 and 400-136.2 narrative). Further, in the course of work on the HRR it was found that one of the cooling tower ponds was located on the east side of Building 444. These ponds were not permanent ponds, they were entirely temporary and of a very short lifetime. Thus, there is very little documentation of these ponds and the events surrounding their use.

As the HRR team discussions evolved, the intent was to provide descriptions of IHSSs 136.1 and 136.2, with these ponds placed as identified in the HRR. The intent was to further suggest for deletion the IHSS 136.3 pond. However, it should be noted that the HRR stated the HRR version of pond 136.1 coincided with the IAG location for pond 136.3. Given this, and the fact that one of the HRR ponds was definitely identified to the east of Building 444, there were two supposed pond locations from the IAG that were left unaddressed. These locations are identified on the IAG map as the locations for IHSSs 136.1 and 136.2. These locations were to be explicitly identified in the HRR as suggested for deletion from further work related to IHSSs 136.1 and 136.2. No documentation or interviewee was found that concurred with pond locations in those two areas.